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ABSTRACT

A study of instructional materials, especially media, available for ophthalmology teaching was initiated at the University of Washington School of Medicine in March 1973. Some 115 catalog and distribution sources were contracted, from which more than 200 potential titles were identified. Fifty three materials were reviewed and evaluated. Six materials were considered of enough value for acquisition by the University of Washington for permanent use, while nine others were approved for periodic loan/rental. In addition, a number of areas where new materials might be produced were identified, three of which are in the process of production. (Author/DGC)

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SEARCH AND EVALUATION

OF LEARNING MATERIALS FOR OPHTHALMOLOGY

1973–1975

SUMMARY

A study of instructional materials, especially media, available for Ophthalmology teaching was initiated in late March, 1973, as a combined effort of the Health Sciences Learning Resources Center and the Department of Ophthalmology, Dr. Robert Kalina, Chairman. Over the next 14 months, 115 catalogue and distribution sources were contacted, over 200 potential titles identified, and 53 materials reviewed and evaluated. Six materials were considered of enough value for acquisition by the University of Washington for permanent use, while nine others were approved for periodic loan/rental. In addition, Dr. Kalina was able to identify a number of areas where new materials might be produced. At least three of these have been, or are, in the process of production at the Health Sciences Learning Resources Center. Finally, Dr. Kalina has expanded his interest in the development of educational materials and has been appointed to the joint committee on curriculum objectives of the American Academy of Ophthalmology and Otolaryngology and the Association of University Professors of Ophthalmology.

Introduction

The search for and selection of learning resource materials of any sort can only occur if there is a combined stimulus of faculty interest and an institutional environment which encourages instructional innovation. It is up to the instructor to determine what he wants to teach, including basic decisions as to expected knowledge and competency in skill areas. The institutional environment must then provide the support personnel and facilities to assist in the initial analysis of learning objectives, the location and evaluation of teaching materials and, finally, the actual management of a new curriculum effort. In the case of the search for ophthalmology teaching materials, Dr. Kalina indicated there was a need to find and/or develop instructional materials appropriate for teaching ophthalmology to medical students, particularly first and second year medical students involved in the practice of clinical skills. Even more specifically, Dr. Kalina stated that the department lacked good materials for teaching about pupillary responses, visual fields, eye movements, strabismus, external disease of the eye, cataracts, the use of the ophthalmoscope, the appearance of the retina, and eye emergencies. Encouragement and funding support for the search and evaluation effort were provided as a part of the School of Medicine's extensive efforts toward educational development and curriculum innovation. This, then, permitted the commitment of personnel and facilities from the Health Sciences Learning Resources Center to the support of a 14-month study.

Details of the methods employed and the results of the ophthalmology study provide a clear example of the work involved in the location and placement of new instructional materials in a medical school curriculum. Moreover, it should help the reader to understand individual requirements in areas of faculty involvement, support personnel, facilities, search methodology and funding which are essential to a successful search.

Support Personnel Functions and Search Methodology

Basic management support for the study was provided by the Health Sciences Learning Resources Center of the University of Washington as a part of its

responsibility to assist faculty in the location, display, evaluation and modification of instructional materials, especially media, for health science education. By way of funding support from the Curriculum Office of the School of Medicine, it was possible for the Health Sciences Learning Resources Center to assign an education/information specialist to the project and provide the basic facilities and technical/secretarial support staff required for the search. To help bring order out of chaos, it was considered extremely important that a search effort of this nature follow a careful protocol. Thus, sequential steps of search, analysis, selection, curriculum placement and evaluation were carefully set down and recognized as a methodology protocol for the study. The methodology protocol used for the ophthalmology study is shown below.

Search Methodology

While the key steps in the search and evaluation are outlined in the protocol (Figure 1), a more detailed description of each step is in order. This is provided in both general terms and as specifically applied to the ophthalmology search.

SEARCH METHODOLOGY

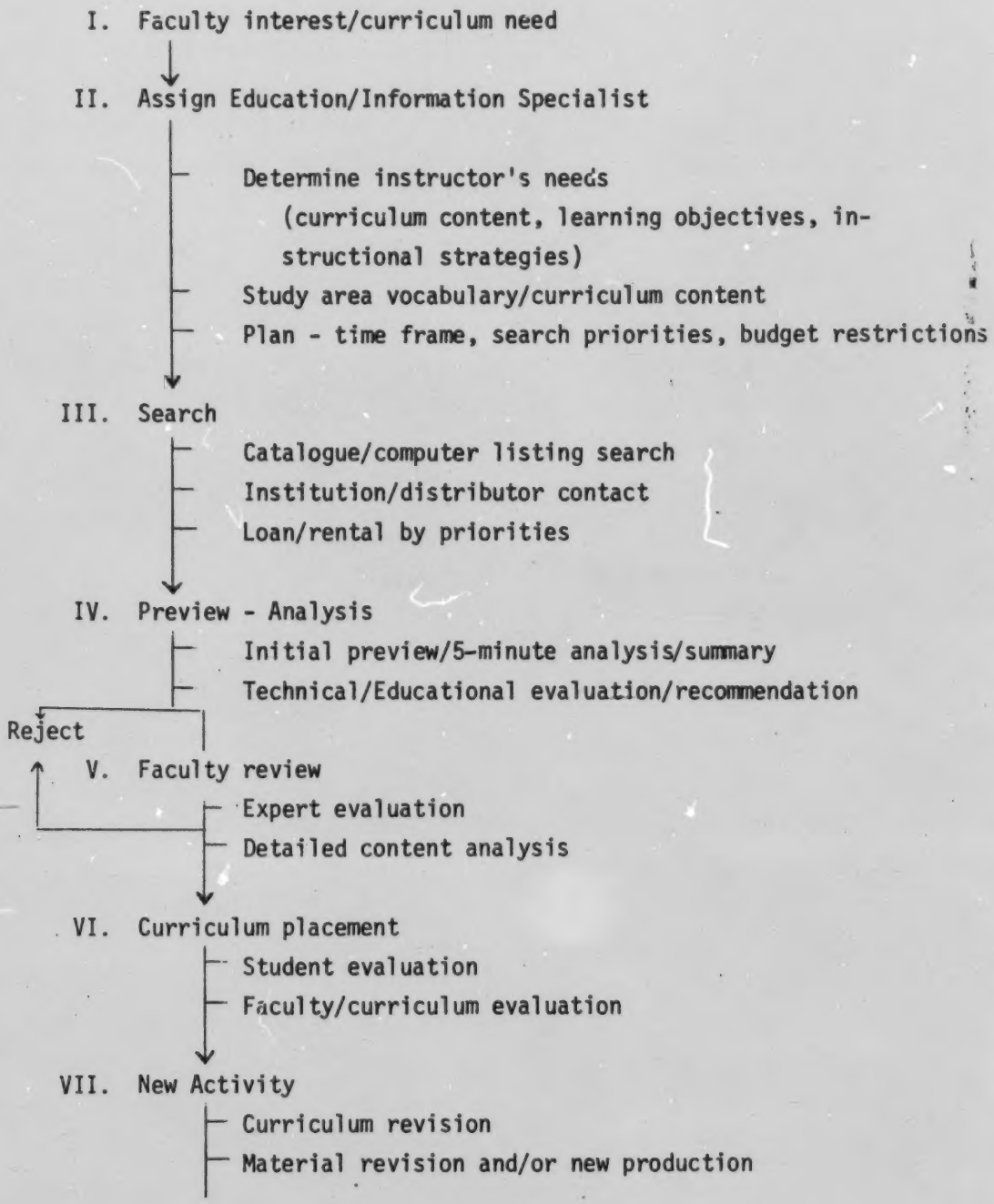

Figure 1

I. Faculty Interest/Curriculum Need - As mentioned in the Introduction, any search and evaluation effort is impossible without basic interest on the part of the faculty to find and/or develop new materials for their teaching efforts. Such interest is predictably present to some extent in the majority of faculty members; however, that interest will not flourish unless the curriculum environment of the school or department encourages the large investment of time and energy required for developing new instructional techniques. Absence of support or, at times, negative attitudes towards teaching will obviate any serious commitment. In addition, the institution must offer a high level of administrative, financial, management and service support if the introduction of modern instructional materials and teaching techniques is to be successful. The individual faculty member cannot be expected to carry out such efforts completely on his own.

> *In the case of ophthalmology, the situation was ideal. For a number of years, the chairman and faculty of the Department of Ophthalmology had shown a serious and sustained interest in the development of curriculum and instructional materials, both locally and on a national level. This interest in education was clearly supported by the keen interest of the Dean of the School of Medicine in curriculum development, including the financial support for innovative programs. An expression of the support for such efforts was the funds provided to the Health Sciences Learning Resources Center for the personnel and facilities required for such a search and evaluation program.*

II. Assign Education/Information Specialist - The assignment of a responsible support coordinator to the project is a first and most essential step in carrying out a successful search and evaluation program. An effort of this nature requires the overall control of a single individual. Moreover, the assigned individual should have training or experience in several disciplines, including library skills, theory and practice of education, curriculum development, learning resource management and educational evaluation techniques, together with sufficient background in science to understand a specific content area. As for the

latter, in-depth knowledge of the content area can be of considerable value. However, this should not invite the designation of a junior faculty member to the role of responsible support person unless there are clear institutional plans to recognize this effort for career development and promotion. Since this is generally not the case, it seems most appropriate and even mandatory, that a skilled individual with advanced training in the field of education, especially learning resource management, with subsequent training and/or experience in the health science content area be employed as the responsible support person.

At the University of Washington, personnel with combined backgrounds in education and health science are available through training programs of the Office of Research in Medical Education (ORME) and as a part of the established staff of the ORME office and the Health Sciences Learning Resources Center. According to the specific characteristics of a project, an individual with such a background can be assigned from existing personnel or brought onto the staff as either a research assistant for a research project or under the existing titles of Education Specialist or Information Specialist. Job descriptions, training and performance requirements for the latter two categories are provided as Appendix I.

> *For the ophthalmology project, an information specialist from the Health Sciences Learning Resources Center was assigned as the responsible support coordinator. The specific individual assigned had a Master's degree in Education and a background of multi-year experience in high school level education. In the area of health science education, she had been involved in a major search, evaluation and curriculum planning effort for the Department of Behavioral Sciences instructional program on death and dying. Otherwise, aside from having been married to a physician, she had limited familiarity with basic science or the specialty area of Ophthalmology.*

Once a support coordinator is assigned, it is his/her responsibility to develop an overall plan for the study. This involves the sequence of steps outlined in Figure 1; i.e. - the determination of the instructor's needs,

including planned curriculum content, learning objectives and instructional strategies; a study of area vocabulary and curriculum content; the establishment of a time frame; a selection of search priorities and, finally, a determination of budget restrictions. Each of these is mostly self-explanatory. The determination of organized curriculum content with a detailed set of learning objectives and instructional strategies is the first step to the planning of any curriculum activity or instructional material. The proper development of such detailed material is a standard skill of an individual with advanced training in education. Similarly, the development of a time frame for the study, search priorities and overall budget restrictions are basic procedures for a management coordinator.

In contrast, the study of area vocabulary and curriculum content is more difficult. By way of using individuals with major backgrounds in education as support personnel, it becomes necessary to provide the individual with a rapid introduction to the content and vocabulary of the area. Without such training, it is virtually impossible for even basic decisions to be made concerning applicability of learning resource materials. An adequate introductory experience can usually be provided by reading a basic manual or text in the area, reviewing a few self-instructional materials where vocabulary is stressed and, if possible, participating in the on-going curriculum. The latter activity obviously takes considerable time and will prolong the study. Thus, learning the subject matter is perhaps the most difficult aspect of any search; yet it is only by knowing what must be taught that really valid suggestions about selection and curriculum placement can be made.

For the Ophthalmology study, Dr. Kalina provided his Ophthalmology Curriculum outline covering the four years of medical education. In addition, detailed objectives for the Introduction to Clinical Medicine Course in the first and second year were available. Copies of the outline and learning objectives are included as Appendix II. As for the study of vocabulary and curriculum content, the coordinator began by reviewing the self-instructional material on ophthalmoscopy, distributed by the National Medical Audiovisual

Center. This provided considerable basic vocabulary and understanding of some of the instructional needs in the area of skill training and knowledge. In addition, the Department of Ophthalmology owned two films and several slide sets concerning the embryology of the eye, examination of the external eye and the use of the ophthalmoscope, normal and abnormal findings in the retina, and evaluation of the patient for glaucoma. These were also reviewed in order to gain knowledge and understanding of the instructional needs and area content. Finally, a time frame, search priorities and level of budget commitment was determined. A target of 12 months was established for completing the study. The search was to be primarily aimed at finding materials which would assist in the teaching of basic clinical skills; i.e., materials best suited for Introduction to Clinical Medicine/Physical Diagnosis courses. However, Dr. Kalina expressed considerable interest in also looking at materials which would provide assistance in the early stages of the medical school curriculum with the teaching of external diseases of the eye, ophthalmoscopic appearance of the eye, strabismus, eye emergencies, cataracts, visual fields and pupillary responses. Further, he was interested in materials which could be used by advanced students and residents for learning procedure and care routines. Finally, as regards budget restrictions, the coordinator was limited to 1/4 time for this specific study.

III. Search - Once the instructional goals and learning objectives of the instructor are identified, the coordinator can initiate the search for teaching materials. This obviously begins by identifying and listing materials already available at the University of Washington, either within the department, the existing curriculum or within one of the library or learning resource facilities. Since no central catalogue is available, a number of catalogues and personal contacts are necessary. The next step is to investigate outside sources of appropriate materials. Once again, there is no one center or catalogue which can supply the researcher with a complete listing of educational materials on a particular topic. The National Medical Audiovisual Center attempts to screen materials and to provide a print-out of those which are considered acceptable by professional reviewers, an effort which has recently

been improved through the coordinating input of the AAMC and National Library of Medicine. The current effort is aimed at establishing a computer source catalogue similar to the MED LINE service for journals; it will be called AV LINE. Unfortunately, this service is still under development and not yet functioning. The result is that one must track down many different catalogues, lists, and knowledgeable people from which to cull titles and distributors. This is not only extremely tedious and frustrating work, but also the researcher always has the feeling, no matter how many sources have been checked, that in the next catalogue or on the next list there will be just the right film or tape for teaching purposes. This makes it extremely difficult to suspend the search, even though one is soon overwhelmed with titles.

Once a list of titles has been identified, the coordinator must determine which are the most promising ones according to established search priorities, then contact the distributor or parent institution and arrange for loan and/or rental. This is also an extremely tedious process. Few institutions have well established, clear administrative mechanisms for the maintenance of catalogue and distribution services, so that it is often difficult to locate a responsible individual. In dealing with commercial distributors, rental agreements are required and tight time restrictions are set for loan, preview and return. Thus, the coordinator must personally contact each distributor institution, find a responsible agent for that institution, determine the loan/rental policy and then commit to a time schedule for the loan and preview. This usually requires one to several long-distance phone calls and the solving of multiple communications and bureaucratic problems. Letters rarely work and ordering forms consume much precious time in filling out information, sending requests and awaiting responses.

The Ophthalmology search provided a clear example of the difficulties experienced in identifying and arranging for preview of appropriate materials. Initially, some nine materials were identified as owned by the Department of Ophthalmology or one of the University's Library-Learning Resource facilities. A list of these materials

with a brief description of their content is provided in Appendix III.

In the hope that specific written materials could direct the search efforts, an ERIC search through the Health Sciences Library was next undertaken. Literature regarding the location and evaluation of effective media and learning systems and articles on curriculum change and teaching developments were requested. A time limit was placed on written materials; only those articles or books written within the last six years were considered current enough for evaluation. The result of the ERIC search effort was quite dismal. No titles were found which pointed directly towards a catalogue or listing/evaluation of a group of learning resource materials. Studies of curriculum changes or innovations where new materials had been tested in ophthalmology were non-existent. A single reference to the use of computers in ophthalmological education -- "A Computer Based System Integrating Instruction and Information Retrieval: A description of some methodological considerations," by Judith Selig, February, 1968, published by Harvard University Computing Service and available through the Clearing House for Federal Scientific and Technical Information, Springfield, Virginia, 22151 -- was identified as potentially valuable to an on-going computer-assisted instruction program at the University.

Since there is no single source for cataloguing medical teaching materials in the United States, the next step involved the identification of catalogues, computer print-outs and any potential leads provided by the faculty of the Department of Ophthalmology for existence of learning resource materials. To a large extent, this was a haphazard business where catalogues were examined and likely organizations contacted for leads. For example, drug companies known to produce products used by ophthalmologists were contacted in the hope that they had developed some materials appropriate for teaching ophthalmology in medical school. Dr. Kalina helped by making it a point throughout the search to call attention to materials which had been specifically recommended to him

by other ophthalmologists or which he discovered in brochures or at meetings on the local and national levels. The result of this process - an alphabetical list of 115 potential sources of ophthalmological teaching materials discovered during the search process - is included as Appendix IV. Sources of special value included the National Medical Audiovisual Center, the National Information Center for Educational Media (NICEM) at the University of Southern California, the AMA's Medical and Surgical Motion Picture Catalogue of Selected Films, Medical Film Reference Guide for Medicine and Allied Sciences, the Conrad Berens International Eye Film Library catalogue, and the Smith, Miller and Patch Memorial Film Library catalogue.

As for difficulties experienced in deciding that a material might be of value and then contacting the institution or distributor and arranging for loan or rental of materials, a full record of this activity can only be reminiscent of Catch-22. The lack of any standard procedures for describing a material and for arranging loan made it impossible to establish even the most general guidelines. Usually, a media title was selected on the basis of, at best, a 2-3 sentence description. Detailed descriptions of content or evaluation experiences were rarely provided. Most distributor contacts had to be made personally, by phone, often involving conversations with more than one individual at an institution or distribution point. The details of loan and rental policy were individually established for each institution or distributor, and it was not uncommon to have to deal with the absurd -- the catalogue listing of materials which no longer exist, exist but are unavailable for loan or purchase to other educational institutions, are listed as available and on file but cannot be copied or sent for some bureaucratic reason, are available but just can't be found, or are listed in the catalogue but have yet to be produced. A further frustration was the lack of a standard way of listing media. Ophthalmology teaching materials were found in indices under such various headings as:

ophthalmology
eyes
seeing
vision
perception
burns
trauma
blindness
rehabilitation
emergencies
ocular disorders/diseases
pediatrics
anatomy
physiology
surgery
medicine
pharmacology

and under specific subtopics of ophthalmology or medicine as:

glaucoma
vitrectomy
diabetes
hypertension
tumors
strabismus
visual fields

Finally, there was the problem of the mysterious relocations of distributors. This phenomenon can frustrate even the best detective.

As a result of such roadblocks and delays in material location, acquisition and preview, it was possible during the 14 months of the study to preview only 53 of the potential 200 titles identified for some area of ophthalmological education. This is not an unusual experience with this type of effort.

IV. Preview-Analysis - A major activity of the project coordinator is to develop a system for preview and analysis of content which will permit selection of the most appropriate materials for subsequent faculty review. For maximum effectiveness of the program and minimum wastage of faculty time and energy, the project coordinator should only involve faculty in review of those materials which have a high potential for inclusion in the curriculum. Thus, the coordinator should use to a maximum his/her skills for technical evaluation, educational strategy evaluation and, to some degree, content evaluation of the materials. For example with materials demonstrating equipment or skill procedures, many may be rejected simply on the basis of being out-of-date. Moreover, media which does not fit existing playback systems at the University can be rejected on the basis of technical difficulty. Finally, in the area of educational evaluation, a major error in educational design can be appreciated by the coordinator and be the basis of rejection before faculty review.

As a part of this preview-analysis activity, the coordinator must develop a system for identifying each material, summarizing its content and itemizing points of criticism/evaluation. This record of preview, analysis of content and coordinator evaluation/recommendation can follow a number of formats. Examples of several that have recently been used for such efforts are included as Appendices V and VI. Whichever format is used, it is important that the coordinator and involved faculty repeatedly discuss the key decision points employed to reject materials; that is, the faculty should help define what criteria the coordinator uses to reject or accept a material. Once begun, this discussion of criteria for rejection can help both faculty and coordinator better establish specific points within the curriculum which will lend themselves to new learning resource materials.

Fifty-three materials appropriate to ophthalmology teaching were brought to the Health Sciences Learning Resources Center for preview and evaluation. The coordinator previewed the entire material and according to its apparent value for the curriculum prepared a summary description of its contents and an evaluation. Because of limitations in time and funds, the summary description

and evaluation of most materials, especially those to be rejected or of apparent limited value, was limited to one short paragraph summary of content and another of specific criticisms of content, educational design and technical quality. When a material was considered of potential high value, a detailed analysis of content was prepared. In the case of videotapes or films, each five minutes of running time was described as to its material content and visual presentation. For slide sets, the audiotape was handled as above, while each slide was listed with a description of its subject. (See Appendix V.)

The brief content analysis and evaluations for the 53 materials previewed by the project coordinator are included as Appendix VI. A single example of the detailed 5-minute analysis can be found in Appendix V. Finally, a list of materials which were not previewed but were considered by the coordinator to be of potential value to some area of ophthalmological education is included as Appendix VII.

V. Faculty Review - Once a material is considered of potential value to the curriculum, it must be reviewed and evaluated by one or more faculty members. This step can mark the success or failure of any search and evaluation program. Because of the restricted time frame of most loan/rental agreements, it is essential that the faculty maintain close contact with the project coordinator. Once the coordinator accepts a material as potentially valuable, she should be able to arrange faculty review within 48 hours. Otherwise, it will be necessary in most instances to return the material to the distributor and arrange for a second loan/rental. This can result in delays of six months or more in completing the faculty review sequence.

It is also important to recognize that faculty require experience and familiarity with the material before their expert evaluation will be reliable. Early in the process, the review and evaluation process will take considerable time, including lengthy discussion as to the material's technical quality, educational design and potential use within various areas of the curriculum. In these early stages of faculty experience, materials which later will be

easily rejected are often accepted for possible use in the curriculum. Later, as experience accumulates, the faculty find it much easier to do an expert evaluation and are willing to accept far fewer materials for their use. However, their interest may well expand into areas other than medical school education, as for example, post-graduate education, lay education, etc. This phenomenon can greatly disturb the search priorities that were initially established.

> *Dr. Kalina and the ophthalmologic faculty were exceptionally responsive to the need for a highly coordinated review process. Whenever possible, Dr. Kalina personally reviewed potentially acceptable materials; he also used the department's established weekly Clinical Photographic Review Sessions with residents and faculty as a forum for viewing and discussing potentially useful media. In addition, the coordinator provided an interim oral report to Dr. Kalina after two months of operation and a written report toward the eighth month of the project. The latter included a proposed list of audiovisual materials to be included in the ophthalmological curriculum in the Spring of 1974.*

Similar to the preview-analysis procedure, faculty review can follow any one of a number of formats. One essential requirement for successful review is the personal attendance of the study coordinator during the review session. To leave the faculty alone with the material is to invite total collapse of the project or, at best, an extremely sketchy report as to their reaction to the material. As for developing detailed comments on the value of the material, instruments such as those shown in Appendix VIII may be used to collect data from faculty as to the appropriateness of the material for specific student groups and to look at the accuracy and balance of the material's content. However, the use of any instrument requires considerable experience on the part of the faculty in material evaluation and content analysis. It also is hard work and

therefore limits the number of materials which can be reviewed in any single session.

> *In the case of the ophthalmology study, due to time limitations training in the use of detailed evaluation instruments was not provided. Faculty members did not have the opportunity to learn or experience the more complex skills of expert evaluation, especially the detailed analysis of content. Faculty review was limited to the broader aspects of usefulness of individual materials within the curriculum. General comments as to usefulness, accuracy and appropriateness of educational design were collected and recorded by the coordinator during the review sessions and are included in the brief summaries and evaluations, Appendix VI.*

VI. Curriculum Placement - Curriculum placement can begin as soon as a material is considered acceptable by faculty review. In fact, the earlier a material is moved into on-going curriculum efforts, the better it is for guaranteeing continued enthusiasm on the part of the faculty in the search and evaluation effort. This step in the procedure usually occurs with little difficulty. If anything, faculty and students are overly enthusiastic about new materials and innovations in instructional strategies, making balanced evaluation of acceptability and effectiveness difficult.

It should be recognized, however, that the curriculum placement step of a new instructional material can be a major expense to the institution. Not only must many of the instructional materials found during the search be purchased at a high price from a distributor, but also there are costs to the institution for equipment, production of duplicate materials and subsequent library, school or learning resource center maintenance of the materials, storage and display, establishing check out procedures, and providing areas where students can view the media on a self-instructional basis. Here is where the willingness of the institution to support curriculum innovations and new instructional developments is tested to its greatest extent. This is often made more difficult by the high cost of some of the better materials, especially those distributed through profit-making organizations.

Finally, once the decision is made to try curriculum placement of a material, careful plans must be laid out for student and faculty evaluation of its effectiveness. This evaluation includes detailed study of student attitudes, knowledge acquisition and skill training according to the content of the material. At the same time, the faculty must support the introduction of a new material or technique by using it with students and willingly evaluating it in terms of the resulting modifications in curriculum design and instructional strategy. The latter can require a large number of expert educational personnel and support facilities sufficient to carry out in-depth studies of curriculum design.

One of the first materials reviewed as a part of this study, the National Medical Audiovisual Center's self-instructional material on ophthalmoscopy, was introduced into the ophthalmological curriculum during the first year of the study. The material was considered most appropriate for introducing students to the use of the ophthalmoscope, providing them with the manipulative skills required and some understanding of normal and abnormal retinal observations. Thus, the material was placed in the Introduction to Clinical Medicine (Physical Diagnosis) Course for comparison with the previous lecture-demonstration sessions on the use of the ophthalmoscope. One third of the class was permitted to use the NMAC self-instructional material while the remainder of the students received the traditional lecture-demonstration session. The students then were compared. Tutors observed the students' skill with an ophthalmoscope and a final quiz, using slides, was given to determine their ability to recognize normal and abnormal findings of the fundus. In addition, students using the self-instructional material were asked to complete a questionnaire concerning their reactions to the educational design, content and technical presentation of the material. A summary of this evaluation can be found in Appendix IX. The students believed the self-instructional set was quite helpful. Testing failed to show a difference as compared to students receiving traditional instruction.

Since this initial evaluation procedure, six pieces of media from sources outside the University of Washington have been incorporated into the Introduction to Clinical Medicine course. Three were made optional for the students in general but recommended for students serving clinical electives in ophthalmology. Three were required for successful completion of the course. A list of these materials is as follows:

1. *Glaucoma, slide set, audiocassette, study manual. Produced by Douglas R. Anderson, M.D., University of Miami School of Medicine, 1974. Placed on reserve in the Health Sciences Library for individual use. Required.*
2. *Ophthalmoscopy: Basic Self Instruction for Medical Students, Drs. Arsham, Colenbrander, and Spivey in cooperation with the National Medical Audiovisual Center, 1972. A seven part slide and audiocassette series. Placed on reserve in the Health Sciences Library for individual use. Required.*
3. *Recognizing Glaucoma, Douglas Anderson, M.D., University of Miami School of Medicine, 1971, dubbed from 16mm kinescope to 3/4" videocassette through permission of Ayerst Laboratories. Placed on reserve in the Health Sciences Library for individual use. Optional, recommended for clinical ophthalmology electives.*
4. *Recognizing Strabismus, John Flynn, M.D., University of Miami School of Medicine, 1971, dubbed from a 16mm kinescope to 3/4" videocassette by permission of Ayerst Laboratories. Placed on reserve in the Health Sciences Library for individual use. Optional, recommended for clinical ophthalmology electives.*
5. *Screening for Glaucoma - Tonometry, Slides, manual, audiocassette. Produced originally by Dr. Paul R. Lichter of the University of Michigan in 1974 and edited by Dr. Robert Kalina to a 15 min. audiocassette with 52 slides. Placed on reserve in the Health Sciences Library for individual use. Required.*

6. *Swinging Flashlight Test for Retinal and Optic Nerve Disease, Paul Levatin, M.D., Kaiser Foundation Hospital, Oakland, California, 1962, dubbed from 16mm film to 3/4" videocassette with the permission of Dr. Levatin. Placed on reserve in the Health Sciences Library for individual use. Optional, recommended for clinical ophthalmology electives.*

In addition, Dr. Kalina requested that nine films be loaned or rented at three year intervals so that each new group of residents might see them during their training. The list of these materials is as follows:

Anterior Adnexa, The
Circulation, The
Extraocular Muscles, The
Globe, The
Indirect Ophthalmoscopy of the Peripheral Retina
Nerves, The
Orbit, The
Techniques for Correcting Low Vision
Visual Pathways, The

As for a broad faculty evaluation of curriculum design since the introduction of these new materials, no activity has taken place. However, in part this is related to the recent development of formalized curriculum objectives in a study guide for medical student education in ophthalmology by the Association of University Professors of Ophthalmology. Details of this activity are discussed under New Activity.

VII. New Activity - One of the more valuable results of a search and evaluation study is the stimulation of new activity on the part of the faculty in curriculum development, instructional innovation, and material production. By way of the attention directed at curriculum content and

student learning objectives, the groundwork is set for the design of new approaches to knowledge and skill-learning problems. The search and review of existing educational materials rapidly expands the faculty's awareness of previous and on-going activities by other institutions, providing clear examples of good and bad instructional materials. Finally, the exercise of rigorous evaluation of existing materials helps introduce the faculty member to evaluation procedures, removing most of the mystery and anxiety which often accompany the first mention of such procedures.

Once again, the ophthalmology study provided a clear example of the potential new activity spin-off of a search and evaluation project. The faculty have come to use the support coordinator quite effectively in providing them support for locating and evaluating educational materials. Familiarity with existing materials has now led to the planning and production of two new videotapes - "The Examination of Pupils and Visual Fields," Richard Mills, M.D.; and "Examination and Treatment of the External Eye," John Chandler, M.D. Dr. Kalina has edited and revised two other materials for use in the Introduction to Clinical Medicine course and, finally, Dr. Kalina has been appointed to the Joint Committee on Curriculum Objectives of the American Academy of Ophthalmology and Otolaryngology and the Association of University Professors of Ophthalmology. This committee is responsible for a broad study of curriculum objectives for ophthalmology medical education, and has developed a study guide for medical students in ophthalmology. The guide has narrowed the material required in an introductory ophthalmology curriculum to seven basic problem areas: visual acuity, ophthalmoscopy, glaucoma, red eye, injuries, amblyopia and strabismus, and neuro-ophthalmology.

The study guide suggests references in the four basic ophthalmology text books and recommends the use of at least one of these texts in association with the guide. The texts are:

Havener, W.H., Synopsis of Ophthalmology, edition 4, St. Louis, C.V. Mosby Company (to be published in 1975).

Newell, F.W., Ernest, J.T., Ophthalmology: Principles and Concepts, edition 3, St. Louis, C.V. Mosby Company, 1974

Sheie, H.G., Albert, D.M., Adler's Textbook of Ophthalmology, edition 8, Philedelphia, W.B. Saunders Company, 1969.

Vaughan, D., Asbury, T., General Ophthalmology, edition 7, Los Altos, Lange Medical Publications, 1974.

Self instructional media materials are also to be developed to accompany the Guide. To date, of the nine recommended, only five have been completed. Of these five, three are owned by the University of Washington's Learning Resources Center and/or the Department of Ophthalmology: NMAC's "Ophthalmoscopy," Lichter's "Screening for Glaucoma in Your Office - Tonometry," and the ophthalmoscopy mannequin. The latter has not been considered valuable by medical students and faculty at the University of Washington and was recently eliminated from use within the curriculum. The cover test simulator for testing strabismus is expensive and at least five would have to be purchased for use at University Hospital and affiliated learning centers. The "Glaucoma Screening - Tonometry" developed by NMAC with doctors Arsham, Colenbrander, and Spivey is a fairly recent addition to NMAC's Instructional materials. Since the University of Washington Learning Resources Center and/or the Department of Ophthalmology already utilize two programs on this subject, one by Dr. Paul Lichter and one by Dr. Douglas Anderson, as well as a 16mm film entitled The Glaucomas, and since NMAC does not permit preview prior to sale, it was not considered essential to purchase this material immediately. It will eventually be considered by the Department of Ophthalmology for possible inclusion in the curriculum.

Four other self instructional materials are to be developed in 1975 and the University of Washington's Department of Ophthalmology will surely consider them for possible inclusion in Human Biology 451-461.

All the materials will be distributed by NMAC and prepared by the Self-Instructional Materials in Ophthalmology Project (Doctors responsible in one capacity or another are: G.M. Arsham, A. Colenbrander, J.C. Creech, M.K. Kirk, R.L. Stamper, M.R. Stein, H.B. Ostler, D.M. Worthen, N.M. Newman, H.J.L. VanDyk.) The titles of the yet to be produced self instructional materials are: General Ocular Examination (Sub units to include visual acuity, external examination, motility, tonometry.) Red Eye and External Disease, Ocular Emergencies, Neuro-ophthalmology.

Dr. Kalina proposes to teach ophthalmology in 1975 as a part of the Introduction to Clinical Medicine course by following the seven basic problem areas as outlined in the Ophthalmology Study Guide plus an additional one, "How the Eyes See," which will review the form and function of the eye and visual system. Students in ophthalmology for the first time will not be subjected to the mass lecture technique of teaching. Instead, the instructional design has altered to provide four seminar sessions of one hour each on two successive days in order to meet the course objectives and to cover the eight problem areas as outlined in Appendix X. Appropriate media will be used to supplement the seminars as well as being required or optional for self-instruction. Thus, instructional innovations and curriculum changes can result from increased awareness of educational techniques and materials.

Further, the Puget Sound Chapter of the American Academy of Ophthalmology and Otolaryngology has recently decided to invest in the eight-part videocassette training program being developed by the AAOO and distributed by VIS (see Appendix VI, C.) Dr. Kalina and several Academy members recently previewed one videotape entitled "Diagnosis of Vertical Strabismus", and agreed to recommend purchase of the set to the organization. In a fine example of university-community cooperation in this financial undertaking, the materials will be housed in the Health Sciences Library and technical equipment will be provided by the Health Sciences. The teaching materials

will be available at any time to Academy members as well as health science students. Dr. Kalina intends to use the series for residency and student elective training and for optional viewing by other medical students.

In conclusion, given the existence of faculty interest and an institutional environment which encourages instructional innovation, the process of search and evaluation of existing educational materials can lead to the gradual and measured introduction of new materials, ideas and change to a curriculum, a more systematic look at curriculum objectives and the production of new instructional materials for education at multiple levels.

APPENDIX I

UNIVERSITY OF WASHINGTON

HIGHER EDUCATION PERSONNEL BOARD

Job Specification for Class

INFORMATION SPECIALIST I
INFORMATION SPECIALIST II
INFORMATION SPECIALIST III
LEARNING RESOURCE
EDUCATIONAL SPECIALIST

UNIVERSITY OF WASHINGTON

HIGHER EDUCATION PERSONNEL BOARD

Job Specification for Class

INFORMATION SPECIALIST I

Definition:

Under technical direction, participate in writing and editing assignments.

Distinguishing Characteristics:

Positions in this class write drafts of and edit standard communications material. Work is performed under direction of a senior information specialist or equivalent.

Typical Work:

Under established guidelines, gather background information by research and personal interviews, and write drafts of newsletters, brochures, publicity releases (radio, TV, newspapers, etc.), proposals, speeches, memoranda, etc.;

Assist in liaison work between clients, publication and production personnel; arrange for distribution of communications material;

Translate statistical reports, research documents, abstracts/concepts, and verbal directions into prose and pictorial concepts;

Edit copy for style and accuracy of material;

May prepare layouts and paste-ups; participate in photographic duties; take photographs, etc.;

Perform related duties as required.

Minimum Qualifications:

Bachelor of Arts' Degree in Communications, English, Journalism, or related field. Additional full-time writing/editing experience may substitute year-for-year for educational requirement.

Examination Requirements:

A job element examination (including written, E & T, and oral components) scored on the basis of job related experience, training, skill, ability, and other elements which are established through job analysis.

UNIVERSITY OF WASHINGTON

HIGHER EDUCATION PERSONNEL BOARD

Job Specification for Class

INFORMATION SPECIALIST II

Definition:

Perform writing and editing assignments in the development, preparation, and dissemination of communications material.

Distinguishing Characteristics:

Positions in this class have responsibility for writing and editing communications material which requires special knowledge, as well as initiative and judgment. Work independently under general supervision.

Typical Work:

Gather background information by research and personal interviews and write newsletters, brochures, publicity releases (radio, TV, newspapers, etc.), proposals, speeches, memoranda, etc.;

Provide liaison between client, publication, and production personnel to arrange for distribution of communications material;

Translate statistical reports, research documents, abstract concepts, and verbal directions into prose and pictorial form;

Edit copy to check for appropriateness of style and accuracy of material;

May perform photographic duties;

Perform related duties as required.

Minimum Qualifications:

Bachelor of Arts' Degree in Communications, English, Journalism, or related field, AND two years' writing/editing experience. Additional full-time writing/editing experience may substitute year-for-year for educational requirements.

Examination Requirements:

A job element examination (including written, E & T, and oral components) scored on the basis of job related experience, training, skill, ability, and other elements which are established through job analysis.

UNIVERSITY OF WASHINGTON

HIGHER EDUCATION PERSONNEL BOARD

Job Specification for Class

INFORMATION SPECIALIST III

Definition:

Conceive, develop, coordinate, and disseminate communications material. May lead other publications and/or media writers.

Distinguishing Characteristics:

Positions in this class have responsibility for conceiving, writing, editing, and reviewing communications material of complex or highly technical nature, requiring considerable background knowledge. Work independently under general direction.

Typical Work:

Maintain relations with campus, public, and private organizations to exchange information and promote communications programs;

Maintain liaison with administration to assure that professional ethics and the school's public information policies are observed;

Perform writing and editing duties relative to major communications project;

Review and edit communications material prepared by other information specialists or authors prior to publication;

Coordinate and arrange communications events such as press conferences, workshops, and seminars;

Determine and recommend appropriate communications media for dissemination of material;

May lead other writers and supervise clerical personnel;

May perform photographic duties;

Perform related duties as required.

Minimum Qualifications:

Bachelor of Arts' Degree in Communications, English, Journalism, or related field; AND four years' writing/editing experience. Additional full-time writing/editing experience may substitute year-for-year for educational requirements.

INFORMATION SPECIALIST III

Examination Requirements:

A job element examination (including written, E & T, and oral components) scored on the basis of job related experience, training, skill, ability, and other elements which are established through job analysis.

UNIVERSITY OF WASHINGTON

HIGHER EDUCATION PERSONNEL BOARD

Job Specification for Class

LEARNING RESOURCE EDUCATIONAL SPECIALIST

Definition:

To coordinate and manage activities between the faculty, the Learning Resources Center and its satellite learning resource centers for the purpose of improving teaching and learning.

Distinguishing Characteristics:

Positions in this class will provide professional and administrative skills in conjunction with the educational services within the University system and the Learning Resources Center. Responsible for overall coordination and management of the activities and facilities involved in course development, production of in-hospital instructional materials, evaluation of learning experiences, library services, technical services and training services.

Typical Work:

Performs research on methods of introducing educational materials from the Learning Resources Center into the satellite learning resources center. These centers acting as self-learning laboratories of instruction.

Coordinates all activities required for course development toward the utilization of the use of audiovisual materials and the subsequent evaluation of these teaching materials.

Supervises information centers for books, journals and research reports dealing with instructional media, methodology and research.

Manages those activities at the self-learning laboratories involved in the development of instructional materials such as films, videotapes, slide sets, audiotapes and photographs.

Supervises students and faculty in the utilization of instructional materials and the meeting of their educational objectives.

Acts as consultant to the faculty in the development of new teaching materials and equipment, offering them as understanding in both scientific and technical knowledge.

Experience in the use of computer terminals - instruction and testing.

Makes studies of and evaluates medical education development programs.

LEARNING RESOURCE EDUCATIONAL SPECIALIST

Responsible for organizing, conducting and participating in conferences, workshops, demonstrations and classes on the application and utilization of audiovisual materials.

Participates as contributor, consultant and resource person in professional organizations and publications.

Works as a public relations expert providing faculty with information regarding material and services available.

Responsible for overall coordination of budgetary and purchasing requirements at all learning resources centers.

Interviews and trains personnel for the satellite learning resources centers.

Supervises all personnel at the satellite learning resources centers.

Supervises establishment of new satellite learning resources centers.

Minimum Qualifications:

1. Master's degree in education and/or allied health education.
2. Graduate level courses to include educational principles, management and audiovisual technics.
3. 4-6 years experience as supervisor in learning resources center or major media center.

APPENDIX II

UNIVERSITY OF WASHINGTON
DEPARTMENT OF OPHTHALMOLOGY
PROPOSED CURRICULUM AND OBJECTIVES

1972 - 1974

APPENDIX II

DEPARTMENT OF OPHTHALMOLOGY CURRICULUM AND OBJECTIVES 1972-74
UNIVERSITY OF WASHINGTON

A. Ophthalmology Curriculum Proposal, 1972-74

Year One - Morphologic, biochemical and physiologic basis for vision (Neuro-sciences core curriculum).

Year Two - Techniques of eye examination (Advanced physical diagnosis and introduction to ocular diseases.)

1. Physiologic basis in measurement of visual acuity
2. Basis of visual symptoms
3. External diseases of the eye
4. The red eye
5. Eye movements and strabismus
6. Pupillary responses
7. Visual fields
8. Ophthalmoscopic appearances
9. Glaucoma
10. Cataract
11. Eye emergencies and emergency care of the sick and injured
    a. Chemical injuries
    b. Blunt or penetrating trauma to the globe
    c. Trauma to the ocular adnexae
    d. Acute angle closure glaucoma
    e. Corneal ulcer
    f. Corneal abrasion or keratitis

*Year Three - Eye manifestations of systemic disease

1. The ocular fundus in systemic disease
    a. Diabetes
    b. Hypertension
    c. Vascular occlusions
    d. Hyperviscosity
    e. Angioid streaks
    f. Inflammation
        1) Syphilis
        2) Histoplasmosis
        3) Toxoplasmosis
    g. Metastatic tumors
    h. Sun gazing
2. Ocular pharmacology and toxocology
    a. Anesthetics
    b. Autonomic agents
    c. Antibiotics
    d. Cortico steroids
    e. Side effects of systemic agents
        1) Cortico steroids
        2) Chloroquin

3. Pediatric ophthalmology

   a. Amblyopia
   b. White pupil
   c. Battered child
   d. Neonatal ophthalmology

      1) Retrolental fibroplasia
      2) Infections

4. Endocrine and metabolic disease

   a. Dysthyroid disease
   b. Diabetic ophthalmology

5. Neuro-ophthalmology

   a. Vascular
   b. Neoplasms
   c. Giant cell arteritis

Year Four - Clinical elective.

B. Ophthalmology Objectives for Introduction to Clinical Medicine,

Students will be able:

1. To elicit and record ocular and other medical historical information pertinent to ocular disease.
2. To measure and record distant and near visual acuity.
3. To examine for and detect inflammatory and neoplastic disorders of the eyelids, conjunctiva and cornea.
4. To take a culture of the conjunctival sac if indicated by examination.
5. To detect and relate the significance of pupils unequal in size or responsiveness to light.
6. To test for and detect abnormal eye movements in a patient with suspected neurologic disease.
7. To perform Schiotz tonometry and interpret the results in any patient with suspected glaucoma and in all patients over 40 years of age.
8. To perform direct ophthalmoscopy in order to detect opacities of the ocular media, so as to:

   a. differentiate between normal and glaucomatous or edematous optic discs;
   b. differentiate between normal and abnormal maculae;
   c. detect intraocular tumors and retinal detachment.

9. To arrive at a diagnosis as to cause, and either initiate treatment or referral, for a patient with unilateral or bilateral red eyes.
10. To diagnose, initiate treatment, and complete treatment of infectious disorders of the eyelids and conjunctiva.
11. To diagnose and initiate treatment of non-penetrating ocular injuries, including conjunctival and corneal abrasion, conjunctival and corneal foreign bodies, and chemical burns.

12. To diagnose and refer penetrating ocular injuries, hyphema, and complicated lacerations of the eyelids.
13. To understand the potential complications of treatment of inflammatory disorders of the eyelids and conjunctiva and of non-penetrating ocular injuries.
14. To describe verbally and diagramatically the findings discovered through the diagnostic techniques described above.
15. To state the potential relationships of ocular findings to systemic diseases, either identified or unidentified.
16. To communicate the results of the ocular examination to the patient in order to gain his confidence and cooperation for necessary treatment.

* The proposal for the third year was not included in the final curriculum. Clinical electives were offered instead.

APPENDIX III

LIST OF EXISTING MEDIA

AT THE UNIVERSITY OF WASHINGTON

IN 1973

FOR THE TEACHING OF OPHTHALMOLOGY

LIST OF EXISTING MEDIA AT THE UNIVERSITY OF WASHINGTON

FOR THE TEACHING OF OPHTHALMOLOGY

1973

DEPARTMENT OF OPHTHALMOLOGY SLIDE COLLECTION

An extensive slide collection covering all aspects of ophthalmology, using lighted rack display cabinets for the collection.

Over the years, the department has amassed a comprehensive collection of 2,500 slides covering primarily abnormalities of the fundus. A fourth of these slides are available in stereo. The collection is housed in the University Hospital Eye Clinic and is displayed on recently purchased vertical, lighted racks. Slides are filed by disease code and used by residents, faculty and students taking ophthalmology electives. A full-time photographer is employed by the department and one of his major responsibilities is to expand the slide collection by taking pictures of eye clinic patients with the Zeiss fundus camera.

Embryology of the Eye, George W. Cormer, M.D. and George K. Smelser, Ph.D., 16 mm., color, 43 min., no date, CBIEFL

A series of eye models demonstrated the development of the human eye. These were supplemented by drawings and animation to show 3-dimensional form development. From 17 days to the optic cup formation, the eye was treated as a whole; from 35 days on, details were shown for different sections of the eye. In conclusion, a general view of the eye as a whole and its relationship to the fetus was shown.

Dr. Kalina considered this an excellent teaching aid for residents, but felt it was too advanced for medical students.

"Examination of the Eye", Robert Kalina, M.D.
2000-5000 format videotape, 7 min., B/W, 1970, UWHSLRC

In this videotape Dr. Kalina demonstrated the routine examination of the eye, including the use of the Schiotz Tonometer. Since 1970, the Health Sciences Learning Resources Center has added color to its television capability and refined production methods. Dr. Kalina expressed interest in re-making this videotape.

"Fundus Oculi", Robert Kalina, M.D.
Set of 17 slides with accompanying study manual, 1970, UWHSLRC

Normal and abnormal characteristics of the fundus were demonstrated. Conditions such as benign lesions, choroidal nevus, myelination, hemorrhages and proliferative retinopathies were included.

Dr. Kalina expressed a desire to revise this set.

Glaucomas, The (Replacement for Glaucoma, What the General Practitioner Should Know)

16mm, color, 23 min., 1971, WSSPB, NSPB

This film dealt with the definition of glaucoma, how it manifests itself in patients, and the diagnostic tests physicians need to know. In addition, medical and surgical treatment for glaucoma was briefly described.

Dr. Kalina has utilized this film in the Introduction to Clinical Medicine course.

MEDCOM, Famous Teachings in Modern Medicine

Each unit contained 100 or more 35mm slides which have been indexed, titled and numbered. In addition, a lecture guide and a small hand viewer accompanied each program. The titles in ophthalmology included:

"Corneal Ulcers", Ira A. Abrahamson, Jr., M.D.

"Diabetic Retinopathy", Arnall Patz, M.D.

"Fluorescein Angiography of the Ocular Fundus", J. Graham Dobbie, M.D. and Earl Choromokos

"Ocular Fundus in Systemic Disease", David G. Cogan, M.D., and David D. Donaldson, M.D.

"Ophthalmologic Manisfestations of Medical and Neurologic Disease", Ira A. Abrahamson, Jr., M.D.

"Pediatric Ophthalmology", Ira A. Abrahamson, Jr., M.D.

"Red Eye, The", Ira A. Abrahamson, Jr., M.D.

The Department of Ophthalmology owns this set, and members of the department utilize the slides for lectures, clinical review sessions, and tutoring sessions. In addition, the department loans out slide sets to ophthalmologists in Seattle upon request.

Not all of the titles were considered by Dr. Kalina to be adequate; however, three were of particular value: "Ocular Fundus in Systemic Disease", "Red Eye, The" and "Pediatric Ophthalmology".

DISEASE OF THE EYE, Dr. Frank Netter
14 slides - medical illustrations, UWAVC, CIBA

Several of the Frank Netter slides are divided into two or more sections dealing with a particular topic. For example, slide six deals with the treatment of corneal scars and includes five drawings: 1) the corneal ulcer, which is shown stained with fluorescein, 2) optical iridectomy, 3) keratoplasty, 4) a disc with the scar tissue cut out of the patient's eye, 5) a donor's disc being sutured to the patient's eye. Examples of other slide titles include "Anatomy of the Lid", "A Study of Conjunctivitis",

"Keratitis," "Glaucoma," and "Gonioscopy."

The labelling is difficult to read on the slides when used with a small screen. For self-instructional purposes, the slides could be placed on reserve in the Health Sciences Library for use by students in audiovisual rooms equipped with large screens.

OPHTHALMOSCOPY MANNEQUIN, Slide set showing 20 eye abnormalities with accompanying study manual, UWHSLRC

The mannequin was difficult for students to use because eye abnormalities on the slides often did not coincide with the study manual. Further, it was an awkward piece of equipment on which to practice the ophthalmoscope. Dr. Kalina expressed reservations about its value within the curriculum, and it was subsequently dropped as a teaching aid in the Introduction to Clinical Medicine course.

OPHTHALMOLOGIC AUDIOTAPES on The Diseases of the Eye, J. Lawton Smith, M.D. A set of 24, 1970's. UWHSLRC

Each audiotape reviews the eye in systemic disease. Although listed here, this series was acquired in 1974.

OPHTHALMOLOGY AUDIOTAPES, "Optic Nerve," Dr. Robert Kalina
Set of nine slides with accompanying study manual, UWHSLRC

The normal optic nerve heads as well as such pathologic conditions as papilledema and optic atrophy were shown.

Dr. Kalina expressed a desire to revise this set.

APPENDIX IV

ALPHABETICAL LIST OF POTENTIAL SOURCES FOR TEACHING MATERIALS IN OPHTHALMOLOGY

LIST OF AUDIOVISUAL CATALOGUES, INSTITUTIONS, TELEPHONE CONTACTS AND PRINT-OUTS EXAMINED FOR THE SEARCH

The abbreviation key in the left hand column refers to abbreviations used at the end of each media description in Appendix 6 and 7 and in the body of the report. Addresses are given only for contacts whose materials were considered for the report.

AAOO	American Academy of Ophthalmology and Otolaryngology Rochester, Minnesota
ACC	Appleton-Century-Crofts Meredith Corporation Educational Division 440 Park Avenue South New York, New York 10016
ACS	American Cancer Society, Inc. 219 East 42nd Street New York, New York 10017
ACR	American College of Radiology 20 North Wacker Drive Chicago, Illinois 60606
	American College of Surgeons Motion Picture Library 55 East Erie Street Chicago, Illinois 60611
AFIP	Armed Forces Institute of Pathology Audiovisual Support Center Washington, D. C. 20305
AIM	Association Instructional Materials (AIM) Division of Association-Sterling Films 2221 South Olive Street or 600 Grand Avenue Ridgefield, New Jersey 07657 or 5797 New Peach Tree Road Atlanta, Georgia 30340
AL	Abbott Laboratories Abbott Park Professional Relations D-383 North Chicago, Illinois 60064
	Albany Medical College Department of Post Graduate Medicine

	Alfred Higgens Productions
	American Academy of Pediatrics
	American College of Physicians
	American Hospital Association Film Library
	American Medical Association Department of Post Graduate Programs
AMAMHFL	American Medical Association Medical Health Film Library 535 North Dearborn Street Chicago, Illinois 60610
	Ames Company, Division of Miles Laboratory Inc.
AMFL	Ayerst Medical Film Library, Ayerst Laboratories New York, New York 10017
	or Distributing Agent - AIM
	Association of University Professors of Ophthalmology
	ASTRA Film Library
	Behavioral Sciences Tape Library
BHES	Blue Hill Educational Systems P. O. Box 113 Monsey, New York 10952
BTL	Bell Telephone Laboratories Film Library Murray Hill, New Jersey 07974
	Brooke Army Medical Center
	California Medical Association Film Library
	Canadian Broadcasting Company
	Carl Zeiss, Inc.
CBIEFL	Conrad Berens International Eye Film Library 246 Danforth Avenue Jersey City, New Jersey 07305 ATTENTION: Dr. Patricia Rainier, Director

CIBA	CIBA-Geigy Pharmaceutical Company P. O. Box 1340 Newark, New Jersey 07101
	Columbia University Center for Mass Communications
CRM	CRM Educational Films Delmar, California 90214
DG	Davis and Geck Surgical Film Library American Cyanamid Company One Casper Street Danbury, Connecticut 06810
EL	Eli Lilly Company Audiovisual Film Library Department MC - 340 Indianapolis, Indiana 46206
	Ethicon
	Films, Inc.
	Georgia Regional Medical Television Network
	Graphic Films Corporation
HO	Hansen Ophthalmic Development Laboratory P. O. Box 613 Iowa City, Iowa 52240
	Harper and Rowe Inc.
	ICI America Inc.
	Indiana University
IDCE	Institute for Dermatologic Communication and Education 840 Powell Street San Francisco, California 94108
	International Film Bureau Inc.
	Iowa State University
IUSM	Indiana University School of Medicine Medical Educational Resources Program 1100 West Michigan Street Indianapolis, Indiana 46202
	J. B. Lippincott
	Lakeside Laboratories Inc.

	Learning Corporation of America
	Little, Brown Medical and Nursing Books
	McGraw-Hill
	McMaster University Health Sciences Learning Resources
	Maryland Society for Medical Research Inc.
	Mead, Johnson and Company
MEDCOM	MEDCOM Two Hammerskjold Plaza New York, New York 10017
	Medical Film Reference Guide for Medicine and Allied Sciences Federal Advisory Council for Medical Training Aids 1966, 1970, 1972.
	Medical Media Network
MRSF-RCGP	Medical Recording Service Foundation of the Royal College of General Practitioners Kitts Croft Writtle Chelmsford, CMI 3-EH Essex, England
	Merke, Sharpe and Dohme
MSU	Michigan State University Instructional Media Center East Lansing, Michigan 48824
MTPS	Modern Talking Picture Service Inc. 160 East Grand Avenue Chicago, Illinois 60601
	Mountain Plains Educational Media Council
	National Audiovisual Center
	National Information Center for Educational Media (NICEM) at the University of Southern California
	Network for Continued Medical Education
NFL	Nursing Film Library (DENT) 743 Alexander Road Princeton, New Jersey 08540

NMAC	National Medical Audiovisual Center Station K Atlanta, Georgia 30324
NSPB	National Society for the Prevention of Blindness 79 Madison Avenue New York, New York 10016
	Norelco Training Programs
	North American Phillips Corporation
OSDH	Oklahoma State Department of Health Tulsa, Oklahoma
	Oregon State System of Higher Education
OSU	Ohio State University Medical Audiovisual and Television Center 1583 Perry Street Columbus, Ohio 43210
PDL	Parke-Davis and Company Professional Library Detroit, Michigan 48232 Or Distributing Agent-MTPS
PHSAVF	Public Health Service Audiovisual Facility Department of Health Education and Welfare Atlanta, Georgia 30324
PRI-VD	Professional Research Inc. - Video Digest of Continuing Medical Education 660 South Bonnie Brae Los Angeles, California 90057
	Pennsylvania State University
	Primary Medical Communications
	Pyramid Films
RFL	Roche Film Laboratories - c/o AIM-Association-Sterling Films - 600 Grand Avenue Ridgefield, New Jersey 07657
ROCOM	ROCOM Medical Skills Library Division of Hoffman-LaRoche 1 Sunset Avenue Montclair, New Jersey 07042

	Sandoz Medical Film Library
	Smith, Kline and French
SMP	Smith, Miller and Patch Memorial Film Library Division of Cooper Laboratories (P.R.) Inc. 99 Park Avenue (15th Floor) New York, New York 10016
	Southern Medical School Consortium
SPFL	Schering Professional Film Library Galloping Hill Road Kenilworth, New Jersey 07033
	Squibb Pharmaceutical Company
	State University of New York at Buffalo
T	Trainex Corporation P.O. Box 116 Garden Grove, California 92642
	Travenol Medical Film Library
UC	Upjohn Company Professional Communications Department 7000 Portage Road Kalamazoo, Michigan 49001
UCACF	University of California Academic Communications Facility Center Los Angeles, California
UCEMC	University of California Extension Media Center 2223 Fulton Street Berkeley, California 94700
	University of California, San Francisco
	University of Colorado
	University of Connecticut Health Centers Department of Biomedical Communications
	University of Illinois
	University of Iowa
UMSM	University of Michigan School of Medicine Department of Ophthalmology Ann Arbor, Michigan

UMSMDO	University of Miami School of Medicine Department of Ophthalmology Miami, Florida
UNM	University of New Mexico Network for Continuing Medical Education Library of the Medical Sciences Albuquerque, New Mexico 87131
	University of South Carolina
	University of Texas
	University of Utah
UWAVC	University of Washington Audiovisual Center Administration Building - B54 AC-30 Seattle, Washington 98195
UWHSLRC	University of Washington Health Sciences Learning Resources Center T-252 - SB-56 Seattle, Washington 98195
UWMS	University of Wisconsin Medical School Department of Ophthalmology Madison, Wisconsin
VIS	Visual Information Systems 15 Columbus Circle New York, New York 10023
	Warner-Chilcott Laboratories
	Washington Alaska Regional Medical Program
WSSPB	Washington State Society for the Prevention of Blindness 324 - 15th Avenue East Seattle, Washington 98102
	Wayne State University
	W. B. Saunders Book Company
	Wexler Film Productions
	Winthrop Laboratories
	Wyeth Laboratories
	Xerox Films

APPENDIX V

EXAMPLES OF INSTRUMENTS USED FOR MEDIA REVIEW AND EVALUATION

One Example Each of:

- Slide Set Analysis
- Minute-by-minute Videotape Analysis
- Five-minute-interval Film Analysis

Example of Media Description Form

MEDIA DESCRIPTION

TITLE:

SYNOPSIS:

OBJECTIVES:

AUDIENCE:

EDUCATIONAL STRATEGY:

Format: Producer: Production Date:

Content Responsibility: Cost and Acquisition Information:

Example of First Stage Media Review Form Used to Accept or Reject Media for Intensive Analysis and Evaluation

FIRST STAGE MEDIA REVIEW
(Non-Print Materials)

Reviewer's Name _____ Date _____

TITLE

FORMAT/LENGTH/DATE

PRODUCER

DESCRIPTION

RECOMMENDATIONS

(1) _____ Reject - based upon
___ Date produced
___ Title
___ Title and available description
___ Partial preview
___ Total preview

(2) _____ Edit
Usable portion of concepts _____

(3) _____ Recommend detailed analysis

APPLICABLE AUDIENCE _____

COMMENTS _____

Example of Technical Media Evaluation Form

MEDIA EVALUATION

(Technical)

Program Title_____

Type of Media:

A. TECHNICAL QUALITY 1 = poor; 5 = excellent)

POINT OF INTEREST CLEARLY DEFINED	1	2	3	4	5
APPROPRIATENESS OF CAMERA ANGLES AND MAGNIFICATION	1	2	3	4	5
CLARITY AND OBSERVABILITY OF MOTIONS	1	2	3	4	5
USE OF APPROPRIATE ILLUSTRATIONS (appropriate size? legible? overcrowded?)	1	2	3	4	5
SOUND FIDELITY AND CLARITY (distortion? background noise?)	1	2	3	4	5
QUALITY OF NARRATOR'S VOICE (monotone? difficult to understand?)	1	2	3	4	5
APPROPRIATENESS OF NARRATION TO VISUAL PRESENTATION	1	2	3	4	5
APPROPRIATENESS OF COLOR SELECTION OR BLACK AND WHITE	1	2	3	4	5

OVERALL TECHNICAL ASSESSMENT:

Your Name_____

Date_____

MEDIA EVALUATION

(Technical)

Program Title _____

Type of Media:

B. QUALITY OF PRESENTATION

	Yes	No	Comment
Was introduction adequate?	( )	( )	
Was sequence of concepts logical?	( )	( )	
Was sequence clear and flowing?	( )	( )	
Was pace of presentation appropriate?	( )	( )	
Were complex concepts clearly presented?	( )	( )	
Were complex concepts adequately reiterated?	( )	( )	
Was summation adequate?	( )	( )	
Are supplementary materials needed?	( )	( )	
Does film actively involve learner?	( )	( )	

OVERALL ASSESSMENT:

Your Name _____

Date _____

Example of Media Description, Technical Media Evaluation and Minute-by-Minute Analysis which have been completed by an Education Specialist and are now ready for Expert Objectives-Content Evaluation by Physician

MEDIA DESCRIPTION

TITLE: Recent Advances in Coagulation

SYNOPSIS: Discussion concerning the basic mechanism and aberrations of the hemostatic process, including platelet kinetics, formation of hemostatic plugs, release of ADP, intrinsic system, extrinsic system, *in vitro* reaction, thrombin fibrinogen reaction, lysis and fibrin degradation products.

OBJECTIVES:

(Stated) The learner will know the 1973 hemostatic process model both in broad outline and in aberrations seen in clinical medicine.

AUDIENCE:

Physicians

EDUCATIONAL STRATEGY:

Detailed cognitive information is presented in a lecture/slide format.

Format:	Producer:	Production Date:
Videotape Color 45 minutes.	Television Division, Academy of Health Sciences, U.S. Army, Fort Sam Houston	1973

Content Responsibility:

Samuel Rapaport, M.D.

Cost and Acquisition Information:

U. S. Army, Fort Sam Houston -- No charge

MEDIA EVALUATION

(Technical)

Program Title *Recent Advances in Coagulation*

Type of Media:

A. TECHNICAL QUALITY 1 = poor; 5 = excellent)

POINT OF INTEREST CLEARLY DEFINED — 1 2 (3) 4 5

APPROPRIATENESS OF CAMERA ANGLES AND MAGNIFICATION — 1 (2) 3 4 5

One angle only on lecturer. Distracting when narrator seems to be looking at a chart that viewer cannot see.

CLARITY AND OBSERVABILITY OF MOTIONS — 1 (2) 3 4 5

Hand motion very distracting. The moving arrow darts around and does not really point out.

USE OF APPROPRIATE ILLUSTRATIONS — 1 (2) 3 4 5
(appropriate size? legible? overcrowded?)

Statis.

SOUND FIDELITY AND CLARITY — 1 2 3 4 (5)
(distortion? background noise?)

QUALITY OF NARRATOR'S VOICE — 1 (2) 3 4 5
(monotone? difficult to understand?)

Boring. Talks too fast, very nervous sounding.

APPROPRIATENESS OF NARRATION TO VISUAL PRESENTATION — 1 (2) 3 4 5

Illustrations are kept too long on screen.

APPROPRIATENESS OF COLOR SELECTION OR BLACK AND WHITE — 1 2 3 4 5

Color not seen on videocassette.

OVERALL TECHNICAL ASSESSMENT:

A non-dynamic lecture/slide format presented on film media.

Your Name *Susan Helbig*

Date *11/9/74*

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MEDIA EVALUATION

(Technical)

Program Title *Recent Advances in Coagulation*

Type of Media:

B. QUALITY OF PRESENTATION

	Yes	No	Comment
Was introduction adequate?	⊗	( )	*Very general.*
Was sequence of concepts logical?	( )	⊗	
Was sequence clear and flowing?	( )	⊗	*Rambles.*
Was pace of presentation appropriate?	( )	⊗	
Were complex concepts clearly presented?	( )	⊗	*Too many charts.*
Were complex concepts adequately reiterated?	( )	⊗	*Covers too broad an area.*
Was summation adequate?	( )	⊗	*No summary.*
Are supplementary materials needed?	⊗	( )	*Never shows the overall hemostatic process model.*
Does film actively involve learner?	( )	⊗	*Lecturer talks to charts rather than audience.*

OVERALL ASSESSMENT:

Important theoretical concepts, but presentation is impossible. Never discusses clinical applications.

Your Name *Susan Helbig*

Date *11/9/74*

MEDIA EVALUATION

(Objectives - Content)

Program Title_____

Type of Media_____

Your name and position_____

Reason for reviewing Program_____

Did you complete the entire program? ( )yes ( )no

1. What were the primary objectives of the program in your opinion?
   ( ) To teach a skill
   ( ) To teach factual information
   ( ) To increase awareness and/or to motivate the audience
   ( ) Other_____
   ( ) Not made clear

2. Were the length and format of the program appropriate for these objectives?
   ( )yes ( )no: Too long____ Too short____
   A better format would be_____

3. What audiences would you recommend for this program?
   ( ) Laymen
   ( ) Health science students
      ( ) Medical, Level_____
      ( ) Nursing, Level_____
      ( ) Dental, Level_____
      ( ) Other_____
   ( ) Health professionals (e.g., continuing education)
   ( ) Other_____

	Yes	No
4. Did the material remain consistently appropriate to this level: comments:	( )	( )
5. Was the information presented current and accurate? comments:	( )	( )
6. Were the techniques presented current and accurate? comments:	( )	( )
7. Were appropriate concepts emphasized? comments:	( )	( )

	Yes	No
8. Do the concepts and techniques presented have universal application?	( )	( )

comments:

9. What content areas were included that should have been omitted?

10. What content areas were omitted that should have been included?

11. Would the program require negative teaching on your part (i.e., would you have to reteach differently any content or philosophy presented in the program)?

12. Were the accompanying materials (if any):
( ) Necessary for understanding the program
( ) Not necessary for understanding, but add to value
( ) Too simple
( ) Too complex
( ) Just right

13. How would you recommend using this program?
( ) As main introduction to topic, supplemented by_____
( ) As supplementary material for lecture or discussion
( ) As resource material for review or reference
( ) Not at all
( ) Other_____

14. In what kinds of learning situations could this program be used most succesfully?

( ) Self-study
( ) Group (under ten persons)
( ) Group (over ten persons)
( ) Lecture
( ) Other_____

15. How many exposures to this material would be required for clear understanding to meet the objectives?
( ) Once only
( ) Once or twice
( ) Two to five
( ) More than five

Overall assessment of the program (Please mention ideas you have which would influence your selection of this program.

Date_____

RECENT ADVANCES IN COAGULATION

Minute	Content	Comments
0	Credits Discussion by Dr. Samuel I. Rapaport on the 1973 model of the hemostatic process.	
1	Division of hemostatic process into four steps: 1) Formation of primary hemostatic plugs 2) Generation and burst of thrombin, involving both extrinsic and intrinsic clotting reactions 3) Action of thrombin on platelets, plasma formation and plasma factor XIII 4) Function of fibiolytic process	
2-3	Discussion on platelet kinetics. To include: number, formation, life span and reserve supply.	
4	Detailed discussion on function of platelets giving functions as: 1) endothelial support,	
5-6	2) provide a lipid clotting activity, and 3) by adhering to vessel wall forms mass of primary hemostatic plug,	
7-8	Discussion of formation of hemostatic plugs: platelets do not normally adhere to endothelium, but if the endothelium is damaged, the platelets can contact collagen, basement membranes or other endothelium elements and will stick. Very little is known concerning the biophysics of this reaction.	
9	Discussion on Von Willebrand's factor: A plasma factor necessary for normal hemostatic plugs to form which may be involved in the adherent phase of the formation of the plug. Platelets in Von Willebrand's disease are missing this plasma factor, and are deficient in the way hemostatic plugs are formed.	
9½	Discussion/demonstration of Von Willebrand's factor: 1) Transfusion of plasma concentrates creates drop in bleeding time. (The Von Willebrands factor is necessary for synthesis of Factor VIII.	
10	2) Research with rabbits. When immunizing rabbits with cryoprecipitates: (a) a heterologous antibody is formed which neutralizes Factor VIII in human plasma, and (b) presence of precipitating antibody.	

Minute	Content	Comments
11	Discussion of the mystery surrounding what this material does: why it is necessary and what its function is. 1) It was thought not to be involved in aggregation phase of formation of plugs, 2) It was known that patients had abnormal adhesiveness,	
12-13	3) It was found that antibiotic Risticitin has the ability to cause normal platelets to aggregate, but patients with Von Willebrand's disease have abnormal aggregations when Risticitin is added to their plasma. Experts are re-thinking what the Von Willebrand factor really involves.	
14	States that following the adherence of platelets to collagen, a release reaction is initiated - ADP - from storage granules of platelets.	
15-16	Discussion of the importance of collagen and thrombin in release of ADP for the following reasons: 1) When a normal patient is given aspirin, bleeding time is lengthened 7 - 8 minutes with no interference of hemostasis, 2) When a hemophilic patient is given aspirin, bleeding time is lengthened in excess of 40 minutes with marked improvement of hemplasm.	
17	Discussion of the cause of aggregation of the platelets after release of ADP: 1) associated with shape change of platelets, 2) impaired by pharmacological agents, and 3) importance of fibrinogen on platelet surface.	
18-19	Gives bleeding disorders in which primary hemostatic plug formation will fail despite adequate number of platelets. This includes: a group of qualitative platelet disorders, which may be hereditary, such as: Glanzman's disease where platelets will not respond to ADP, but where the trouble is on the affective end of the ADP aggregation reaction; and a more common group of hereditary mild to moderate bleeding disorders in which the problem is the release of ADP from the platelets.	

Minute	Content	Comments
20	Discussion of the acquired groups of platelet disorders in which the platelets do not work properly yet the count is normal, and disorders in which there may be failure of hemostasis due to failure of primary plug formation even though platelets are normal in function and number.	
21	Discussion of the generation of thrombin. Ways to convert prothrombin to thrombin: (1) the extrinsic system through tissue thromboplastin and (2) the intrinsic system involving only those materials intrinsic to blood.	
22	Discussion of extrinsic system.	
23	Including purification of tissue thromboplastin and interaction between thromboplastin tissue and Factor VII. Two schools of thought re interaction: (1) Factor VII circulates as an active enzyme, (2) tissue thromboplastin interacts with Factor VII to hook lipid on to Factor VII.	
24	Discussion of intrinsic system: Phospholipid is applied by platelet Factor III which is not available to the system as it circulates but has to be made available by a change on the platelet surface.	
25	Activation of Factor XII and Factor IX thrombin. This activation can be triggered by glass, saturated fatty acids, ellagic acid, urate crystals, and collagen fibers.	
26	Illustration showing Factor XII needed *in vitro* but not *in vivo* for normal hemostasis.	
27	Discusses patients with hereditary Factor XII deficiency (otherwise known as Fletcher Factor).	
28-29	Discusses new name--prekallikrein--and its role in the reaction.	
30	Discussion of the *in vitro* reaction. Problem areas: patients with hereditary deficiency of Factor XII and patients defective in Factor XI.	
31-32	A further discussion of the intrinsic system: Once Factor IX is activated by Factor XI and calcium, we get an activated Factor IX.	

Minute	Content	Comments
	Factor IX does not directly activate Factor VIII. Instead: (1) a complex forms with activated XI, calcium, lipid and thrombin-altered Factor VIII, and (2) a second complex forms consisting of activated Factors X and V.	
33	Discussion of formation of thrombin. Discussion of different ways that the blood can clot through the intrinsic and extrinsic pathways.	
34	Including ways Factor X may be activated: by trypsin, Russell viper venom, and a material in mucous.	
35	Discussion of two simple screening tests to check for generation of prothrombin activator: (1) quick test, (2) partial thromboplastin.	
36-37	Discussion of thrombin fibrinogen reaction. Results of first reaction taking place, including molecular makeup of model, action of thrombin, configuration of fibrinogen molecule, release of peptides and subsequent results of this release.	
38	Second thrombin catalyzed reaction occurring when plasma proenzyme, Factor XIII, in the presence of calcium, and the action of thrombin activates XIII.	
39	Discussion of lysis.	
40	Describes function of plasminogen as it is converted to plasmin.	
41	Discussion of plasminogen activators causing splitting: (1) endothelial activator, (2) the intrinsic blood activator, (3) lysis enzymes, (4) activators from secretions, (5) and bacterial activators such as streptokinase.	
42	Discussion of anti-activators, preventing activation of plasminogen and plasmins	
43-44	Discussion of products of the action of plasmin on fibrinogen or fibrin, known as fibrin degradation products.	

An Example of a 3-Page Media Evaluation Form used to determine the effectiveness at various educational levels of a series of six Terminal Illness Videotapes produced by the University of Washington H.S. LRC in 1974

EVALUATION OF DYING PHYSICIAN VIDEOTAPES

We would appreciate your reactions to and evaluation of the videotapes which have been presented as a part of your course. In addition, we have included some questions aimed at determining the relevancy of this topic to students.

PART I - Immediate Reaction

Please give your immediate, gut reaction to the videotapes of a young dying physician.

PART II - Considered Reaction

After discussion, give your considered overall reaction to the videotapes.

PART III - General Questions on Topic: Death and Dying

1. Do you think the subject of death and dying should be a formal part of the curriculum?

_____yes _____no

a. If yes, what would you like to see discussed in the course? (check as many topics as you wish)

_____cultural implications
_____global attitudes toward death
_____the role of the physician
_____use of drugs to ease the psychological stress of the dying process
_____use of drugs to ease pain
_____financial problems of long term care and death
_____role of the spiritual community
_____role of the family
_____role of friends and community
_____the need for attitudinal changes within society
_____Other ... Explain:

b. If no, explain your answer.

2. How do you think the subject can best be taught at your educational level?

3. Have you been directly involved with a terminal patient?

_____yes _____no

If yes, describe what were the most difficult aspects of the situation for you.

What aspects of the problem were easiest for you to handle?

PART IV - Specific Questions on Physician Videotapes

1. How were the tapes presented?

a. _____ as an introduction to the topic of death and dying
b. _____ following class discussion of death and dying
c. _____ as a springboard to discussion of the physician's role with the dying patient and his family
d. _____ as a springboard to discussion of the community's role with the dying patient and his family
e. _____ other. Describe

2. Please rate the impact of the videotapes using a scale of 1 to 4 with 4 indicating the greatest impact.

	Thought Provoking Content	Attitudinal Change Produced	New Information Presented	Emotional Involvement
Tape 1 Introduction to Patient & his reaction to condition				
Tape 2 Problems of the Caring Physician				
Tape 3 Drug Therapy for Pain				
Tape 4 Role of the Spiritual Community				

3. Were your reactions to the tapes influenced by the fact that the dying patient was a physician?

_____yes _____no

If so, in what way?

4. Did you find the medical language of the tape too technical?

_____yes _____no

5. Do you think that the physician should become involved in family reactions to the dying patient?

6. What more/less would you like to have seen or heard?

7. Do you consider the grief process to be the concern of the family physician?

_____yes _____no

If so, explain:

If yes, what role should he or she play?

Would you have liked the scope of the videotapes extended to include this topic?

_____yes _____no

8. What do you conceive of as your role in dealing with a dying person and his family?

9. Please provide suggestions as to how the audio-visual materials might best be utilized?

10. Was the time allotted for the tapes _____too long _____ too short ____adequate.

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Example of Analysis, Evaluation & Recommendation of the Frank Netter slide set:

DISEASES OF THE EYE

Frank Netter's Medical Illustrations

Slide Analyses

SLIDE 1: The anatomy of the lid

SLIDE 2: Disorders of the lid including blepharitis, carcinoma of the lower lid, hordeolum (sty), Chalazion, Chalazion lid everted, and acute meibomanitis.

SLIDE 3: Techniques to remove foreign bodies from the cornea using a needle or spud.

SLIDE 4: A study of conjunctivitis including the finger pressure test, vernal conjunctivitis, subconjunctival hemorrhage and finally episcleritis.

SLIDE 5: Keratitis (inflammation of the cornea). Four drawings showing: 1) technique of applying fluorescein, 2) herpes simplex, 3) acute keratitis, 4) herpes zoster.

SLIDE 6: Treatment of corneal scars. Five drawings: 1) the corneal ulcer, which is shown stained with fluorescein, 2) optical iridectomy, 3) keratoplasty - a corneal disc of the appropriate size is shown which has been cut from a donor's eye, 4) a disc with the scar tissue cut out from a patient's eye and, 5) the donor's disc being sutured to the patient's eye.

SLIDE 7: Anatomy of the eyeball.

SLIDE 8: A cross section of the anterior chamber.

SLIDE 9: Glaucoma. Three drawings: 1) pupillary constriction with edema of the upper lid, 2) acute glaucoma, 3) iritis showing wide angle, and iris bombé glaucoma.

SLIDE 10: Use of the tonometer.

SLIDE 11: Goniscopy techniques.

SLIDE 12: Iridencleisis - shows an iris which has been prolapsed through incision. The iris is transected radically; the second part of the slide shows the completed operation.

SLIDE 13: Cataracts: a cataract extraction and eight smaller drawings ranging from nuclear cataracts to lens extraction by erysiphake.

SLIDE 14: Lesions of the retina and optic nerve. Includes diagrams of: 1) occlusions of the central retina artery, 2) detachment of the retina, 3) retinal and vitreous hemorrhage, 4) occlusion of the central retinal vein, 5) the optic nerve and 6) retinitis proliferans.

EVALUATION

The writing on each slide is very small. Therefore one needs a large screen in order to read the material. Slide 10 on the use of the tonometer is useless; there is no indication of what is normal or abnormal in pressure readings. Otherwise the drawings seem to be accurate and well-labeled.

RECOMMENDED USE

They might be helpful as an adjunct to actual slides of patient problems, or for review following films illustrating one or more of the conditions shown on the slide. Instructors might find them helpful in large lecture situations, where they wish to show slides of actual patient eyes and then show a labeled drawing of the same conditions (or the reverse).
I would recommend placing the collection on reserve in the Health Sciences Library for individual student and faculty use.

Example of a Minute-by-minute Videotape Analysis

GLAUCOMA: RECOGNITION OF

Douglas Anderson, M.D.

October, 1971

Objective: To demonstrate techniques useful in family practice for detecting glaucoma at a treatable stage.

Minute	Counter	Content
1	020	Definition of glaucoma as a syndrome of elevated intraocular pressure doing damage to the eye. Many different varieties of causes of this syndrome.
2	042	Chronic open angle glaucoma characterized as the slow onset, often over a period of years, of insidious elevation of intraocular pressure, followed by a sequence of: 1. High pressure 2. Optic disc cupping 3. Visual field loss, peripheral rather than central.
3-4	073	Film clip demonstrating measurement of intraocular pressure using Schiotz tonometer: (1) Explanation of mechanics of the instrument, including function of parts and significance of scale reading. Anesthetize the eye.
5	120	(2) Use of weights to measure high pressures.
6	144	(3) Use of conversion chart to interpret scale readings, and of test blocks to check zero point and plunger function.
7-8	159	(4) Hold eyelids wide apart: touching the unanesthetized lips with instrument causes patient to blink. Do not push on the eye, as this will increase pressure. Fingertips must roll in to firmly grip the eyelids.
9	200	(5) Other tips: Position face parallel to floor; pause if patient tries to close eye when approached to give him a chance to relax.
10-11	226	Slides demonstrating cupping of the optic disc:
	236	(1) Normal optic disc and vessels.
	251	(2) Physiologic cupping of the disc represents simple exaggeration of the normal dimple in the cup.
12-13	258	(3) Borderline physiologic cupping. Significant criteria are cupping greater than 1/3 of a disc diameter or obvious differences in degree of cupping between the two eyes.
	288	(4) Glaucomatous cupping of the entire disc with vessels displaced to margins.
14	300	(5) Optic atrophy: pale disc still has normal vessels.
	306	(6) Borderline cupping delineated by vessels.
15-16	311	(7) One other characteristic of glaucomatous cupping: it is more prominent at the top and bottom of the disc than on sides.

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Minute	Counter	Content
	327	(8) Example of glaucomatous cupping.
	330	(9) Another example of glaucomatous cupping.
	333	(10) Glaucomatous cupping evidenced only by bending of vessels at edge of disc.
16-17	342	Visual field loss is third finding in chromic open angle glaucoma, but is not practically looked for with any screening procedure. Most frequent area of loss is upper or lower portion of nasal field.
17-18	360	Patient interview. Patient diagnosed during examination for glasses, told she had high pressure, damage to optic nerve and loss of side vision.
19	380	Demonstration of O.S. nasal field loss.
	390	Remarks on acute angle closure glaucoma: Patient presents with a red eye, and this diagnosis must be kept in mind before treating for conjunctivitis.
20	400	Questions from audience elicit the following points: (1) Approximately 2.4% of the population over 40 have elevated intraocular pressure; defining glaucoma as elevated pressure with eye damage gives an incidence of ½-1%.
21	414	(2) Family physicians should routinely measure intraocular pressure on patients if one ascribes to the idea that patients come in for the purpose of making certain they do not have incipient or occult disease.
22	423	(3) Dangerous pressures are usually considered those above 21-22 mm Hg, but there is an overlap of populations so that perhaps 10% of normals will be above 21 on one reading. Therefore readings of 21-24 deserve another reading, and those above 24 deserve full evaluation for glaucoma (detailed retinoscopy and visual field testing).
23	441	(4) It is probably sufficient to clean the tonometer with Kleenex. Aqueous merthiolate, ether and heat have been used, but caution must be observed.
24	457	(5) Fingers are not sensitive to the pressure changes of chronic open angle glaucoma.
25	467	(6) Instruments can be periodically checked for accuracy by independent testing companies if the physician desires.

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An Example of a 5-Minute Analysis Form Completed
by an Information Specialist on an Ophthalmology Film

TITLE: CINE PHOTOGRAPHY IN SYSTEMIC OPHTHALMOLOGY
PRODUCER: PETER Y. EVANS, M.D. & STAFF
GEORGETOWN UNIVERSITY MEDICAL CENTER, WASHINGTON D.C.
DISTRIBUTOR: CONRAD BERENS INTERNATIONAL EYE FILM LIBRARY
246 DANFORTH AVENUE, JERSEY CITY, N.J. 7305
YEAR: 1966
LENGTH: 15 MINUTES
SPECIAL FEATURES: COLOR

Time Sequence:	CONTENT
0-5 minutes	The film begins with a study of circulation in the conjunctiva and the eyes of live patients are shown to illustrate hypertension, arteriosclerosis, the sludging phenomena found in sickle-cell disease and the reversal of blood flow and spaces as seen in multiple myeloma. Marked venous dilatations could be seen easily. Occasional fuzzy photography necessitated the use of a green filter for the hyperproteinemia eyes.
6-10	The fundus was then examined in systemic ophthalmology. Normal and abnormal retinal dye circulation was shown using flourescein studies. A case of central retinal arteriocclusion was shown; also one of central retinal vein occlusion and Eales disease (periphlebitis).
11-15	Variations in the retinal circulation time for the various diseases were demonstrated effectively using the camera. The film continued to show additional patients with various diseases such as chorioiditis, on which it was noted that Caucasians provide better photographic subjects because of the color of their macula and fundus. Histoplasmosis was seen easily. The film concluded with some statements about and references to fluorescein studies.

SUMMARY COMMENTS

This was a super film! It was particularly interesting to see the actual pulsations in the veins and arteries of the eye. I wish that we had been shown how the fluorescein was injected; on occasion the photography was not all that clear. In general, it was a fine attempt at a difficult task. The fact that a number of different types of diseases were shown in live patients provided added interest for the viewer. Not recommended for medical school use, but of interest for post-graduate specialty training.

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APPENDIX VI

BRIEF ANALYSES, EVALUATIONS AND RECOMMENDATIONS FOR PREVIEWED MEDIA

THREE PARTS:

A. 16mm Films

B. Multi-Media and Slide Sets, Computer Programming

C. Videotapes

Abbreviations used at the end of information given about each title refer to the initials of distributors listed in Appendix IV.

FILMS

Angle of the Anterior Chamber, Dr. Felix Deodati, Clinical Ophthalmology, The University of Toulouse, France, color, 18 minutes, 1960's, CBIEFL.

This film presented the angle of the anterior chamber from the anatomical, physiological, and gonioscopic points of view. It was pointed out that biomicroscopy allows examination of the anterior chamber utilizing a contact lens. At this point, animated diagrams were introduced and a review of the anatomy of the anterior angle was included. How the Goldmann gonioscopic lens works in conjunction with the slit lamp was then shown.

The particular print seen had a poor sound track for about seven minutes. It seemed to the viewer that more complete labelling of what was actually being seen through the slit lamp and of the cross-sections of the angle of the anterior chamber was needed. Due to the fact that the film was not dated, it was difficult to judge whether the techniques had changed appreciably since it was made.

This was an extremely detailed film which would not be appropriate for the medical school level but might be useful for ophthalmology electives or residency training.

Application of Lasers in Ophthalmology, Norman P. Schenker, M.D., Upjohn Company, Mini-text #23, color, 6 minutes, 1970, UC.

The film was an attempt at explaining lasers and their use in ophthalmology. The discussion of different light frequencies which one can obtain from lasers and their effect on different parts of the body was presented. Diabetic retinopathy and its treatment with the laser beam, hemorrhages in the fundus, and the use of the Ruby laser for retinal detachment, were the chief procedures shown.

The film is brief; it does not actually show the laser beams in action, but the results are shown on slides after laser treatment. Dr. Kalina used this film in a Wednesday clinical photographic review session for residents and commented that it was outdated.

Not recommended for medical school.

Argon Laser Photocoagulation, Diagnosis and Treatment of Macular Diseases, Arnall Patz, M.D., Johns Hopkins University, color, 10-12 minutes, 1970's, CBIEFL.

A classification of macular lesions began this film. The ones discussed were: sensory retinal edema, central serous detachment of sensory retina, retinal pigment epithelial detachment, combined detachment of the sensory retina and the pigment epithelium, histoplasmosis syndrome. Each of the five disorders was then examined and treated with laser photocoagulation.

Fluorescein was used to diagnose the lesions of the macula. For each of the problems a schematic cross section of the macula was shown, a slide of the fundus, the fluorescein photos, and then the slit lamp pinpointed the problem as seen through the superimposed fluorescein photograph over the photograph of the fundus. Argon beam therapy was then applied on the basis of what was seen.

This was a technically excellent film, although the viewer could not be certain it was up-to-date. At times the lighting was somewhat poor, but one found this excusable due to the difficulty of the task. Dr. Kalina, in his review, stated that "The therapeutic application of the laser in some of the diseases described remains controversial, but this aspect was not brought out in the film." In general, it was easily understood, well organized and brief.

The film was not appropriate for medical students, but might be useful for residents in ophthalmology.

Changes in the Human Eye Fundus, Drs. W. Straub and H. Trogaan, University Eye Clinic, Marburg, Germany. Color, 10 minutes, 1968, CBIEFL

Eye fundus alterations were shown in a series of slides taken through the ophthalmoscope: retinal detachment, pulsations of the optic disc and vessel diseases. A series of weekly controlled pictures were taken of periphlebitis migrans retinae.

The film might be helpful for medical students to prepare them for what they can expect to see through the ophthalmoscope. Where the NMAC slide set on the ophthalmoscope dealt with the normal fundus and some eye variations, this film dealt primarily with evidences of eye disease in general systemic disease. It might therefore be helpful to see this film in conjunction with the self-instructional package from NMAC. It is recommended that Dr. Kalina view this film for its possible use within the medical school program.

Cine Photography in Systemic Ophthalmology, Peter Evans, M.D., Georgetown University Medical Center. Color, 15 minutes, 1966, CBIEFL.

A study of circulation in the conjunctiva of actual patients was shown to illustrate hypertension, arteriosclerosis, sludging phenomenon found in sickle cell disease, the reversal of blood flow and spaces as seen in multiple myeloma. The variations in retinal circulation time for different diseases was demonstrated effectively. Other patients shown had such diseases as choroiditis and histoplasmosis.

This was a superb film! It was particularly fascinating to see the pulsations of veins and arteries in the eyes. To see the actual injections of fluorescein dye into the eye would have been interesting too. There were some problems

with this type of photography - on occasion the objects were out of focus or green filters had to be used - but in general it was an excellent attempt at a very difficult task and provided the viewer with a captivating study of retinal conjunctiva circulation.

It would not be appropriate for medical students but might be of interest to members of the Department of Ophthalmology for their weekly photographic review sessions.

Clinical Applanation Tonometry Using the Goldmann Tonometer, G. Peter Halberg, M.D. of New York Medical College in association with Ayerst Laboratories, color, 14 minutes, 1964, CBIEFL, AMFL.

The film began with a comparison of the indentation tonometer and the Goldmann tonometer. It then followed the complete procedure for testing the eyes with the applanation tonometer, an interpretation of the readings obtained from this procedure, an assurance that the Goldmann technique can be accomplished within one minute on actual patients and that the results seem to be more precise than with the Schiotz tonometer. The importance of tonometry to the diagnosis of glaucoma completed this film.

Technically the film seemed to be very good. The main thrust of the film re-emphasized that physicians ought to be doing tonometry on all people over 40 as a preventative measure against glaucoma. Although the Goldmann tonometer is used regularly by the ophthalmology faculty and residents at the University of Washington, this technique is not considered practical for medical student teaching because of the great expense of the instrument. Goldmann tonometry is taught on an individual basis to residents, and a film was not believed necessary.

Clinical Electroretinography, Jerry Hart Jacobson, M.D., New York Eye and Ear Infirmary. Color, 10 minutes, 1959, CBIEFL.

Schematic drawings of a cross section of the retina opened the film and the process of electro-retinography was defined as a process of recording the potential change in the retina caused by light. The physiological basis, the technical and the clinical importance of electroretinography were then discussed. At the conclusion of the film four examples of electro-retinograms were given. The narrator discussed the diseases which can partially be diagnosed by the use of electroretinography: retinitis pigmentosa, retinal vascular disease, retinal detachment, cataracts, and vitreous opacity were among those mentioned.

The quality of the film was quite poor (for example one is aware of horns blowing in the street below as this production was being filmed), the color was poor and the superimposed music was decidedly out of place. Particularly well done was the procedure of inserting the speculum into the eye.

This is a highly specialized film which would not be appropriate for use in the medical school but which might be of interest to residents or post-graduates in ophthalmology. Dr. Kalina used it for a photographic review session in 1973 with his residents.

Clinical Tonometry, Public Health Service Audiovisual Facility in cooperation with the Fulton County Medical Society of Georgia, black and white, 8 minutes, 1965, PHSAVF.

This film began with the statement that one of the principle causes of blindness is glaucoma and that this disease can be prevented by measuring intraocular tension with a tonometer during a physical examination of a patient. The use of the Schiotz Tonometer was demonstrated as well as how to properly clean the instrument and to read the conversion tables. A demonstration using a live patient then followed.

The sound track and film quality were quite poor. More time seemed devoted to how to clean the instrument than to the measurement of the patient's intraocular pressure. The reviewer felt that the University of Washington's Learning Resources Center and the Department of Ophthalmology could produce an even shorter and much better videotape demonstrating the use of the Schiotz Tonometer.

Not recommended for medical school use.

Diagnosis and Management of Eye Injuries, William H. Havener, M.D., Ohio State University, color, 23 minutes, 1960's, CBIEFL, OSU.

The film opened with the procedure used for examination of the eye lid to determine damage:

1) Immediate measurement of visual acuity using the Snellen Chart.
2) External examination of the patient's pupillary eye movements.
3) Bright illuminations of the eye in an attempt to search for corneal abrasions.
4) Examination for internal injury using the ophthalmoscope.
5) Examination of the conjunctiva and particularly the upper lid to see whether or not injury has occurred.

Techniques for the removal of a foreign body from the eye were further discussed and the treatment for chemical burns was presented. Black eye phenomenon was discussed and finally surgical procedures were presented.

The film appeared to have been made for several different levels of medicine and industry. The products used were all from one drug company and clearly labeled so that one suspected the film was funded partly as a commercial. For medical school use, the industrial section of the film could be cut with no great loss. Photography was adequate as was the narration.

Specifically, it would be suggested that only the first ten minutes of the film showing the physical examination of the injured eye and the last section of the film showing black eye and surgery be used for medical student education. Better still would be a brief videotape made by the University of Washington's Department of Ophthalmology on the same subject.

Errors of Refraction, Drs. William A. Mann and Robert G. Miller of Northwestern University Medical School in association with the American Academy of Ophthalmology and Otolaryngology, color, 20 minutes, 1944, revised 1966, CBIEFL, AL.

The stated purpose of this film was to present the basic principles involved in optical lenses and their application to the neutralization of errors of refraction. The film moved from the concept of the prism to convex and concave lenses, cylindrical lenses and dioptics. An anatomical illustration of the normal eye was shown and a discussion ensued as to how images are formed on the retina and brought into focus by the retina. The process of accomodation for near objects was presented, as well as the way in which lenses may be used to correct hyperopia, myopia, presbyopia and astigmatism.

The 1944 film version was disjointed, explanations were incomplete and often presented after terms had been used earlier in the film. The diagram of the normal eye, for example, showed superimposed changes with no explanation as to why these occurred. A unifying narrative was needed desperately.

Although literature about the film indicated that it was appropriate for medical students and student nurses, it is definitely not recommended for inclusion in the physical diagnosis course for the second year medical students.

Essential Belpharospasm, W.H. Coles, M.D., Medical University of South Carolina, color, 10 minutes, 1970's, CBIEFL.

The clinical features, anatomy, etiologies and differential diagnosis of essential blepharospasm were discussed. It was suggested that L-Dopa might be worth a try in these cases. It was pointed out that although psychiatric conditions often accompany essential blepharospasm, the spasms themselves do not respond to psychotherapy. Medical therapy was suggested, but if this failed surgery was recommended and a series of diagrams as well as actual surgical techniques were demonstrated for facial nerve avulsion. Possible complications of this type of surgery were discussed.

Since this was a very brief, highly technical film, the narration was extremely fast in order to include so much factual information. Dr. John Chandler reviewed this film in a Department of Ophthalmology Photographic Review Session. He stated that the content was fine, the schematics on surgery were good, but the film lacked the latest medical Rx.

It was not appropriate for viewing by medical students but perhaps useful for residents in ophthalmology.

Eye in General Medical Diagnosis, The, American Medical Association, color, approximately 15 minutes, 1957, AMAMHFL.

The use of the ophthalmoscope and the tonometer as well as a review of the basic structure and function of the eye were included in this film. Some diseases which can be seen with the ophthalmoscope were mentioned and shown and the rest of the film stressed the need to screen for glaucoma with the tonometer.

The film appeared to be out-dated in information as well as technique.

It is not recommended for use in the medical school curriculum.

Globe, The, Orbit, The, Dr. Louis Girard Anatomy Series from Baylor University, Houston, Texas, color, 15-17 minutes, 1970-1973, CBIEFL.

The Globe and The Orbit were previewed by the Learning Resources Center. Also included in this series on the anatomy of the human eye are:

The Visual Pathways
The Circulation
The Extraocular Muscles
The Nerves
The Anterior Adnexa

It was not considered necessary to preview the above five films because on the basis of the two which were seen, it was decided that this was an excellent series.

The format of the two films which we previewed was essentially the same. Each began with a model of the section of the eye under discussion and the narrator proceeded to point out the labeled anatomy and to relate the structure to clinical medicine. Then a live patient was presented with a particular ophthalmic problem and clinical signs of this problem were pointed out. The diagrams of the anatomy of the eye were reintroduced at various places in the film to re-emphasize structure and the function of this portion of the eye.

The physicians and information specialist viewing these films agreed that they were well organized, easily understood, employed excellent photography, narration and sound tract.

It was thought that they would be appropriate for a course on the anatomy of the head and neck in the first year of medical school as well as for review with beginning residents in ophthalmology. Realistically, however, the time allotted to the study of the eye in the anatomy course might be too brief to allow use of all the films.

Indirect Ophthalmoscopy of the Peripheral Retina, Drs. Thomas Watzke and T.C. Burton, University of Iowa, color, 45 minutes, CBIEFL.

The purpose of this film was to demonstrate the anatomical features of the peripheral retina as seen through indirect ophthalmoscopy. Drawings showed the divisions of the fundus. Various views of the fundus were seen using the Stenstrom indirect cine-ophthalmoscope. The normal nasal and temporal ora serrata, as well as the various folds of the fundus, were shown clearly. Such aging processes in the peripheral fundus as senile retinal degeneration, honeycomb chorio retinal degeneration, and snail-track degeneration were illustrated. Clearly the ora serrata pearl, pars plana cysts, and various fundus pigmentations were shown. It was pointed out that 5% to 8% of eyes have retinal holes which may consist of flap tears visible only on scleral indentation, thus illustrating the real advantage of indirect ophthalmoscopy.

This film was technically very good, and vivid color pointed out the advantages of indirect ophthalmoscopy. The narration was very rapid, but the information is important and it could be shown twice in order to make certain that students learned all that they could from the picture. Dr. Kalina made use of this film on two occasions, in 1973 and 1974, in his regular photographic review sessions for residents, interns and students electing to take further ophthalmology. Regular showing to ophthalmology residents is planned.

Recommended for residency programs in ophthalmology.

Introduction to Ophthalmology, Patrick Trevor-Roper, consultant, Westminister Medical School, London, color, 3 part series, 18 minutes each, 1962, PDL.

Part I - "Disorientated Eye". This segment began with a general eye examination and included:

inspection of general aspects of eyes
test for visual fields
flashlight test for pupil reflexes
test by hands for intraocular pressure
use of the slit lamp and ophthalmoscope
test for visual accuity
diagnosing errors of refraction and planning possible accommodations

Next the film dealt with strabismus, (or the squint mechanism,) types of strabismus and reasons for diplopia. Remedies were discussed and illustrated. Finally ocular nystagmus was discussed.

Part II - "The Diseases of the Outer Eye". This portion was divided into seven sections: exophthalmos, anamolies of eye lids, the lacrimal system, infections of the eye lid margin, conjunctiva, foreign bodies in the eye, and ulcerations. For each, abnormal conditions in patients were demonstrated and effective therapy - medical and/or surgical-was discussed.

Part III - "The Diseases of the Inner Eye" - Conditions discussed included acute iritis, chronic glaucoma, cataracts, normal vs. abnormal systemic fundus conditions (such as atherosclerosis, diabetes, retinal detachment) and finally tumors of the fundus. Surgical techniques were shown but other specific remedies usually were not included.

The series provided a quick overview -- nothing received in-depth investigation. The diagrams were generally clear and most of the slides were adequate. The use of patients added reality to the presentations. The narrator's British accent might be difficult to understand at times, and references to the metric system might be unfamiliar. Certain techniques were outdated; i.e., measurement of intraocular pressure was done by hand rather than tonometer. Specific prescriptions were not given for medications indicated.

The series would be best utilized, if time permitted, in a basic sciences course to stimulate interest in the subject of ophthalmology. Though it was produced over 10 years ago, it was the only media discovered which gives an overview of ophthalmology. It might also be useful as a summary film for a short course in ophthalmology. Outdated material could easily be corrected and specific remedies could be indicated by instructors. As a self-instructional material, it could be viewed on an optional basis by students before plunging into textbooks and clinics.

Lacrimal Diagnostic Tests, Lester T. Jones, M.D., Devers Eye Clinic, University of Oregon, black and white, 8 minutes, no date, CBIEFL.

This brief film illustrated tests by which the lacrimal systems may be evaluated. There were detailed illustrations of the lacrimal excretory and secretory systems. Tests were carried out on actual patients.

The sound track was extremely poor as was the lighting and the monotone narration. The procedures appeared to be well done.

This was a very brief film and might be used with third or fourth year medical students taking the ophthalmology electives. On the other hand, Dr. Kalina might prefer to make a short videotape of his own with a more effective narration.

Laser Surgery of the Eye, Hugh Beckman, M.D., Sinai Hospital of Detroit, color, 12 minutes, 1970's, CBIEFL.

Rabbit eyes were used to illustrate Ruby laser surgery. The effect of the laser on the aqueous fluid was shown in a series of slow motion shots of rabbit eyes. The film concludes that laser surgery is only in its infancy, but that ophthalmologists can expect great things of it in the future.

This was a fascinating film, but not appropriate for use at the medical school level. Perhaps it could be utilized for residents.

Modern Methodology of Ophthalmodynamometry, Peter Evans, M.D., Georgetown University, color, 17 minutes, 1960's, CBIEFL.

Fundus cine photography through the ophthalmoscope was used to demonstrate central retinal artery tension. Weigelin's formula was charted in new conversion tables. The methodology was shown in great detail as was recording of the information and reading of the conversion tables.

Charts were quite small and very difficult to read, too much time was spent on how to record the information and read the conversion tables. If this film were to be used, it would be necessary to supply the audience with conversion tables of their own. In addition there was a loud hum on the particular film print which was viewed. The pulse waves which cross the disc to the macula were seen very clearly and were the most worthwhile aspects of the film.

It is not recommended for inclusion in the medical school program.

Ocular Bacteriology, (as it pertains to infectious diseases of the eye.) James H. Allen, M.D., Tulane Medical School, color, 45 minutes, 1954, CBIEFL.

The stated purpose of this film was to routinize the bacteriological procedures for clinical ophthalmologists and surgeons so that they would not be time-consuming. A clinical panel of experts was invited to comment on the relationship of the bacteriological examination to their sub-specialties. Two techniques for obtaining ocular bacteria cultures were shown. Dr. Hugh Ormsby discussed inflammatory and infectious diseases of the eye, Dr. Philip Thygeson dealt with lesions of the conjunctiva, Dr. Trygve Gundersen presented the role of the bacterial exam in corneal lesions, Dr. Michael Hogan explained intraocular infections of the eye, Dr. Gustav Bahn talked about orbital infections, and finally Dr. Alson Braley discussed ocular allergy in relationship to the bacterial exam. Following this presentation a chart was shown to illustrate the agreement which the panel came to on basic effective treatment for infectious diseases of the eye.

The panel of experts was extremely camera conscious and seemed to have memorized their words in response to Dr. Allen's questions. Examples of patient diseases were good. Particularly toward the end of the film organization seemed to be lacking as the film awkwardly leapt from panel discussion to laboratory techniques. In general, the film was much too long and of poor technical quality. It attempted to cover far too much

information for one presentation. The film is considered a classic in ocular bacteriology, but since it was produced in 1954 the viewer questions the techniques and suggested treatments. It seems certain that advances must have been made since this time.

Ocular Bacteriology is not appropriate for inclusion in the medical school curriculum; however it might be of interest to researchers in bacteriology and to laboratory technicians and ophthalmologists interested in infectious eye diseases.

Ocular Biomicroscopy, Milton Berliner, M.D., and Goodwin Breinin, M.D., color, 45 minutes, 1953, CBIEFL.

A brief history of the use of the slit-lamp and the microscope began this film. Six methods of examining the eye were detailed and the anatomy of the eye was discussed. A study of the cornea using the ocular biomicroscope was now presented which included inflammation, degeneration, and the problem of foreign bodies in the cornea. Intraocular inflammation showing the angle of the anterior chamber and its importance for diagnosing glaucoma was included. Next the iris was studied under the biomicroscope. An intensive discussion of the lens, as seen with the biomicroscope, followed. Various types of cataracts were stressed in the final portion of the film ways to examine the deeper vitreous and the retina were shown. Finally we were presented with three patients illustrating diabetic retinopathy, senile macular degeneration, and a healed choroditis.

A vast collection of disorders was well presented through the use of actual patients. Apparently photographic techniques did not exist in 1953 to actually show the specimens under the biomicroscope. Diagrams had to be used instead to achieve this purpose. The material seemed extremely advanced and once again it seemed that the producers overwhelmed the viewers with the amount of material presented. One can't help but wonder if the techniques are up to date by 1974 standards. One physician, Dr. Stephen Brown, a resident in ophthalmology who viewed the film, said that the equipment was not up to date but he particularly liked the sections on lens nuclei and cataracts. The particular print which was viewed at the Learning Resources Center went out of focus on occasion, moved very rapidly and was of poor quality in general.

The material presented was advanced and not appropriate for the medical school level of teaching. Pending a decision on whether or not the equipment, techniques, and treatments are current enough to be shown, it is possible that this film might be used for post-graduate work in ophthalmology. One other possibility, if permission could be obtained, might be to lift some of the actual patient examples of disease to videotape for use in the physical diagnosis course.

Ocular Inflammation, Professor Jules Francois, and Dr. Schenker, University of Gent, Belgium, color, 29 minutes, approximately 1960, CBIEFL.

The film began with a basic review of eye anatomy and then introduced patients with acute conjunctivitis. The possible reasons for conjunctivitis such as

allergy reactions, infections, and trauma were explored. Inflammation of the anterior section of the eye was examined and the slit lamp was used to examine a patient for iritis. The use of antibiotics versus cortisone for treatment of ocular inflammation was thoroughly presented and constituted the best part of the film. In addition several actual patient eyes were effectively shown.

For medical school purposes the use of experimentation with animals did not seem appropriate. The reviewer was not certain whether therapy has changed considerably since the early 1060's, and therefore would defer to Dr. Kalina's judgment on this matter before determining the usefulness of the film in the medical curriculum.

Ocular Therapeutics - Part 1 and Part 2, Dr. Francis V. Michal, Postgraduate Medical School, Czech Ministry of Health and Essential Council for Health Education, Prague, Czechoslovakia, color, 18-20 minutes, 1963, CBIEFL.

Both of these films dealt primarily with external injuries to the eye. Part 1 concentrated on the examination of a patient who complained of pressure on the eye ball. The various possible reasons for this pressure were examined. The technique for testing for obstruction of the lacrimal ducts was demonstrated on a live patient, a baby was shown with lacrimal duct obstruction, and patients who had endured burns and vitreous opacity were shown. The use of bandages and compresses was demonstrated as was electric cautery in herpes of the cornea.

In the opening segment of Part 2, a patient with a foreign body stuck under the upper lid was shown. The technique for eversion was done twice and the directions were very specific. Following this demonstration, the procedure for treating an eye which had been damaged by lye or acid was shown. The use of the slit lamp for determining the location of a foreign body in the eye was demonstrated and, the method of excising a chalazion was shown.

Both of these films showed old techniques, the quality was very poor, and the medications were not current. The narration was extremely rapid. The reviewer found both films presented a fascinating contrast to ophthalmic medicine in the United States. The patients were stoic and allowed the physician to do most anything to them without showing any evidence of pain or discomfort. The directions for the doctor were so specific that they appeared to be edicts rather than suggested procedures.

As far as use in medical school is concerned, the value of the films would lie primarily in the contrast between Eastern European medicine and medicine in the United States. The use of live patients to demonstrate techniques is perhaps the strongest point of these films. Generally speaking, the first portion of each of the films was more appropriate for the medical school level. The latter portions were very detailed and

would be more suited to residency training or specialty training. Dr. Kalina showed one of these films to the residents in ophthalmology, who thoroughly enjoyed the Czechoslovakian techniques and patients but came away with little, if any, new information. Since the films were produced in 1963, it naturally followed that many experienced a sense of relief and perhaps appreciation for the fact that American ophthalmic medicine and photography is now much more advanced.

Ophthalmodynamography, Dr. H. Hager, University Eye Hospital, Tubingen, Germany, color, 15 minutes, 1968, CBIEFL.

Much of the film consisted of explaining the various ophthalmodynamographic curves and stressing the importance of assimilating and reading the results of ophthalmodynamography accurately. A live patient who had complained of migraine headaches on the left side of his head was used for demonstration purposes.

In the reviewer's opinion an inordinate amount of time was spent on the evaluation of material gained from this method, and certainly the topic would not be of interest to medical students. Once again Dr. Kalina would have to determine if certain members of his department have an interest in this particular aspect of ophthalmology.

Orthoptic Examination, A Study on Strabismus, Part 2, Hunter Romaine, M.D., of the New York Eye and Ear Infirmary, color, 20 minutes, 1958, CBIEFL.

Diagnostic testing procedures in the routine eye examination for muscle disorders occupied the first six minutes of this film. After learning that the patient was normal we were then told that when she was first seen she exhibited esotropia-esophoria but that through orthoptic training her eye muscles returned to normal.

Techniques for testing and treatment were clearly shown but explanations were not clear as to why and how certain techniques were used. A great deal of time was spent on showing pieces of equipment and identifying their use. Furthermore the patient used had normal function and therefore abnormalities in testing were not shown. The treatment section seemed poorly organized. Little explanation of what the physician might hope to accomplish by the use of the equipment or the probable length of time needed to correct the disorders was included.

Although the first six minutes of the film might be valuable for use in the physical diagnosis course to show diagnostic testing procedures, a brief videotape on strabismus made by the Learning Resources Center and the Department of Ophthalmology would achieve the same purpose, would be current and hopefully better organized and narrated. In the meantime, the kinescope of strabismus made by Dr. John Flynn of Miami School of Medicine is more appropriate for medical school teaching.

Orthoptic Physiology, A Study on Strabismus, Part 1: Physiology of Biocular Vision, Hunter Romaine, M.D., color, 20 minutes, 1958, CBIEFL.

This film presented diagrams and explanations of orthoptic physiology. Abnormalities such as heterotropia, exotropia, esotropia, and diplopia were discussed. Various techniques and equipment were shown, such as the troposcope and stereoscope.

The narration was very poor - the intensity of voice varied and pronouncing difficulties were apparent. It covered too much material too fast and was overwhelmingly technical.

Orthoptic Physiology was definitely not appropriate for use in the medical school curriculum but might be appropriate for post graduate study in physiology or ophthalmology.

Principles and Selected Procedures for Eye Care, DENT, produced by Appleton Century Croft in cooperation with Wayne State University College of Nursing, black and white, 30 minutes, 1972, ACC, NFL.

This film was made from a videotape and designed to give the general anatomical structure of the eye, to identify scientific principles which apply to the care of the eye, and to demonstrate some selected procedures which nurses would be required to carry out in eye care. The selected procedures included eversion of the upper eye lid and how to examine the lower lid, irrigation of the eye, instillation of drops, application of compresses, and the use of eye pads and eye shields.

The procedures in the film were presented very slowly so that nurses watching would easily be able to understand and reproduce the techniques. Some of the material was read from a script by the narrator and at times the sound track was quite poor, probably due to the fact that this was lifted from a videotaped program. One ophthalmologist who viewed the film noted that post operative procedure should have been included. In general, the film was too long and could be cut, in particular the first part, without losing any of the important points.

It is definitely for nursing students, not medical students.

Recognizing Glaucoma, Douglas Anderson, M.D., University of Miami School of Medicine, kinescope, color, 25 minutes, 1971, AMFL.

Dr. Anderson opened this kinescope with the definition of glaucoma as a condition in which: the pressure in the eye is elevated, and this elevated pressure does damage to the eye. He then indicated that he wished to spend most of the program on the topic: Chronic Open Angle Glaucoma. The onset of chronic open angle glaucoma was described as a slow building of pressure from the normal range to a range of 19-20 over a period of years. A film to demonstrate the use of the Schiotz tonometer for

measuring eye pressure is used. Slow damage to the optic nerve was demonstrated by cupping of the disc in the fundus and a loss of visual fields. Dr. Anderson further discussed the cupping of the disc by the use of several slides to illustrate the normal disc, the abnormal disc and the borderline disc. Visual fields were discussed and testing demonstrated on a patient.

Dr. Kalina considered this kinescope to be a good general overall picture of screening for glaucoma and requested that a copy be made on videotape for optional use in the medical school program.

Recognizing Strabismus, John T. Flynn, M.D., University of Miami School of Medicine, color kinescope, 20 minutes, 1971, AMFL.

A definition of strabismus and the number of people affected by it opened this film. Dr. Flynn stressed why it is important to conduct tests on children for strabismus. The cover test was then discussed and illustrated as was the Herschberg method of testing. The further procedure of dilating the pupils and examining eyes with the ophthalmoscope was also encouraged. Both a six year old child and a 14 year old girl, who underwent an operation when she was very young to correct profound vision loss, were presented. Dr. Flynn stressed that early diagnosis was essential in both cases. A third patient who was a 20 year old physical education teacher exhibited divergence of the visual axes with a vertical problem as well.

Technically the film was considered adequate although kinescope color is never very true. It appeared to be a fairly complete and organized general overview of the problem of strabismus.

Dr. Kalina reviewed this film and although he felt it might be a little too detailed for second year medical students, he did want to obtain a copy of the kinescope for use with third and fourth year students in clinical electives. After obtaining permission from Ayerst Laboratories, a 3/4" Sony cassette dub was made of this kinescope and placed in the library on reserve for third and fourth year medical students and optionally for second year medical students in Introduction to Clinical Medicine (Human Biology 451-460).

Sensory Motor Anomalies - Part I: Sensory Status, Dr. Mary C. Fletcher, Department of Ophthalmology, Baylor College of Medicine, color, 15 minutes, no date, CBIEFL.

The object of this film was to present the various tests which can be used to determine the status of biocular vision. It opened with an elementary review of normal fusion, discussed convergences and divergences, and demonstrated exotropia, diplopia and esotropia.

The film would be a good one to review the tests for biocular vision. Dr. Rainier said that Part II in this series was never made.

Recommended for ophthalmology electives in medical school and as review for residents.

Surgery for Congenital and Senile Cataracts, Aspiration of Senile Cataracts, Gerald Kara, M.D., New York Eye and Ear Infirmary, color, 25 minutes, 1960's, CBIEFL.

Motor aspiration was shown on various types of congenital cataracts and both sliding and tumbling procedures were shown with motor erisophake. The indications and the contraindications for each method were discussed and the possible advantages and disadvantages of each were also presented.

This film contained a series of operations on various patients to demonstrate the several surgical procedures. Among the cases presented were:

1) A six month old child with a cataract.
2) An eight year old with a zonular cataract.
3) A nine year old child with a zonular cataract where a full iridectomy was not performed.
4) A 44 year old male on whom iridectomies were performed using a tumbling technique for extracting the lens.
5) A 36 year old female with glaucoma.
6) A 42 year old female on whom a chemical zonulysis was performed.

The photography was quite sharp and very close in most cases. The narrator's voice was a monotone but bearable. Surgical techniques may well be outdated by now but a demonstration of the tumbling technique for extracting the lens was well done, as was the injection of air into the eye.

It is not appropriate for medical students.

Swinging Flashlight Test for Retinal or Optic Nerve Disease, Dr. Paul Levatin, Department of Ophthalmology, Kaiser Foundation Hospital, Oakland, California, black and white, 18 minutes, 1962, UCEMC, SMP.

The film opened with a presentation of three patients chosen to demonstrate disease of the optic nerve. On each patient the swinging flashlight test was used and the pupils dilated when they should have contracted after exposure to the light. The Marcus-Gunn sign of pupillary escape was noted and the Otto Lowenstein pupillographic curve was clearly charted. A whole series of examples illustrated how eyes react to light stimulus both with the light on and the light off. Still photography was used to show how both eyes react at the same time to this light stimulus. Possible reasons for a positive Marcus-Gunn sign were considered: Optic atrophy, optic

neuritis, direct pressure on any part of the optic nerve, retinal detachment, occlusion of retinal blood vessels. The negative responses and problems which might have caused the negative response were also considered; cataracts, amblyopia associated with squint, refractive errors.

This was an excellent film demonstrating a procedure which is so rapid and productive that it should be used by the physician in examining many patients. The fact that it was made in 1962 does not prevent the viewer from appreciating the Marcus-Gunn syndrome.

The Learning Resources Center made a copy of this film on videotape with Dr. Levatin's permission. It now belongs to the Department of Ophthalmology for further use in its teaching program and has been placed on reserve in the Health Sciences Library for the use of ophthalmology residents and advanced students in clinical electives.

System of Gross Examination of the Eye in the Eye Laboratory, A, Jules Stein Eye Institute, University of California, color, 18 minutes, 1970, CBIEFL, UCACF.

The film demonstrates the Jules Stein Eye Institute's technique for cross sectioning the eye, examining it, and recording the findings.

This color film was technically accurate, simply presented, and instructional for medical students, residents, and laboratory technicians.

Dr. Kalina used this film in April, 1973 for a Wednesday afternoon session with residents, faculty, and medical students. In his evaluation he indicated that the film was helpful for those present but that he would not wish to use it again because the University of Washington has a similar technique which can be "learned in a visit to our laboratory." Subsequently, the Learning Resources Center learned that Dr. Frank Milam, Ophthalmologist-in-chief at Harborview Hospital, would like to use this film for his laboratory personnel. The film was ordered for him and used; he indicated a desire to have this film available each year.

System of Ophthalmic Surgery, A, Jules Stein Institute and the University of California, color, 1970, UCACF.

This film showed in detail the design and physical set up of the Jules Stein Eye Institute in California. Modern equipment was demonstrated for use in ophthalmic surgery.

It was determined that this film was not applicable for teaching of ophthalmology, because it was essentially a description of the facilities of the Jules Stein Institute.

Techniques for Correcting Low Vision, Elinore E. Faye, M.D.. New York Association for the Blind, color, 25 minutes, 1970's, CBIEFL.

The film began with discussion of the visually handicapped person who is not legally blind but who can be helped with low vision lenses. It was stressed that there are four parts to the correction of low vision:

1) Test for accurate visual acuity.
2) Accurate diagnosis, good refraction, calculation of correction.
3) Selection of the appropriate correcting device.
4) Training in the use of visual aids for daily living.

Some of the reasons for low vision were mentioned such as: scarred retina, destruction of visual pathways, glaucoma, retinitis pigmentosa. The film also focussed on an albino child who had low vision but who was able to accommodate very well.

Dr. Kalina used this film in 1974 for his regular clinical photographic review session and found it to be of moderate value. The content seemed "somewhat superficial;" he "would have preferred it to be more detailed for resident physicians." Nevertheless, he asked that it be ordered on a rotating basis so that residents would have an opportunity to see the film once within their training.

The film is not appropriate for medical students, but is useful for residency training.

Treatment of Adult Primary Glaucoma, Dr. Paul Bregeat, Paris, France, color, 28 minutes, approximately 1965, CBIEFL.

The film stressed: clinical evaluation needed to make a diagnosis of primary glaucoma, the difference between open angle glaucoma and closed angle glaucoma, and actual surgical procedures useful for treating the disease.

The surgical procedures were not shown close up, due to the limited photographic proficiency in 1965, but they were thoroughly described. Such procedures as the LaGrange operation on open glaucoma, iridectomy, cyclodiathermy, and trephine were shown.

It was definitely not a film for medical students but depending upon the amount of surgery performed for glaucoma at the University of Washington, it might be useful for residents and ophthalmologists. Dr. Patricia Rainier assured the reviewer that all the procedures were standardized and acceptable in 1973.

Use of the Operating Slit Lamp in Cataract Complications, S. D. McPherson, M.D., Durham, North Carolina, color, 15 minutes, 1960's, CBIEFL.

The purpose of the film was to show the use of the slit lamp during surgery and in the post-operative complications stage. A ruptured hyaloid membrane following lens delivery was illustrated, as well as the management of vitreous loss, and the use of the slit lamp in synechotomy for the pupil following cataract extraction.

The full surgery shots were good in this film, but it was difficult to tell what one was seeing under the slit lamp. It would have been beneficial to have had some well labeled still photographs of the procedures and what was seen through the slit lamp.

It is not recommended for inclusion in the medical school program.

Multi-Media & Slide Sets,
Computer Programming

"Emergency Eye Care," Trainex Corporation, Garden Grove, California, film strip and audiocassette for Dukane projector, 1971. TC

The film strip covers basic emergency eye care procedures for nurses. A brief review of the anatomy and physiology of the eye is included as well as the emergency equipment and medications needed, the general nursing care required for traumatic eye injuries, and specific nursing care for traumatic eye injuries: penetrating and non-penetrating foreign bodies, thermal injuries, chemical injuries, injuries resulting from concussion or a contusion.

This self instructional series would not be applicable to the medical school curriculum. It is totally geared to elementary nursing care and might be useful on reserve in the library for review of the basic principles of emergency eye care by nursing students.

"Glaucoma", Douglas R. Anderson, M.D., University of Miami School of Medicine, slide set, audiocassette, and study manual, 1974. UMSMDO

Aspects of glaucoma which are particularly relevant to the practice of primary patient care are included in this slide set. Specifically covered are: 1) Definition of glaucoma in terms of aqueous dynamics, 2) Signs and symptoms, recognition of, differential diagnosis and management of acute angle closure glaucoma, 3) Signs and symptoms, recognition and management of chronic open angle glaucoma, 4) Signs of congenital glaucoma, 5) Secondary glaucoma. The study manual contains a summary, review questions and answers.

Dr. Kalina previewed this self instructional package and found it to be well organized containing excellent information and recommended its purchase for use within the University of Washington medical school curriculum.

"Glaucoma Screening - Tonometry", self-instructional package for medical students, Drs. Arsham, Colenbrander & Spivey, 22 color slides & 3 min. audiocassette, study guide, 1974. NMAC (Optional super 8mm, sound, color, 2 1/2 minutes).

This set is designed to teach students: tonometry using the Schiotz tonometer, how to interpret findings, and how to plan patient management.

Since this set is not available for loan, rental or preview, Dr. Kalina will decide whether or not $35.00 should be spent for the unit. Descriptive literature is available from The National Medical Audiovisual Center, Sales Branch, Washington, D.C. 20409.

"Miscellaneous Eye Problems", Mr. Michael Bedford, eye surgeon, Royal College of General Practitioners, Chelmsford, England, set of 27 color slides accompanied by a 24 minute audio reel to reel tape. MRSF-RCGP.

"The Red Eye", Mr. Michael Bedford, set of 19 slides accompanied by a 26 minute reel to reel audiotape.

Both of these self instructional slide-audiotape sets were produced in the 1950's and as a result the photography as well as some of the information presented is outdated. Both attempt to give an overview of clinical problems seen by the ophthalmologist.

Dr. Kalina previewed the sets and found them to be totally inappropriate for inclusion in the medical school and residency program at the University of Washington.

"Ophthalmoloscopy: Basic Self Instruction for Medical Students," Drs. Arsham, Colenbrander, and Spivey of Pacific Medical Center, San Francisco, California, seven-part multi-media unit with slides and audiocassette, study guide, color, 1972, NMAC.

The objectives of this teaching unit were to enable the students to a) carry out a systematic examination of the ocular fundus, b) accurately describe the findings, c) determine whether or not the fundus is within normal limits (WNL), d) use an ophthalmoscope. In order to accomplish these objectives, a series of seven slide sets and audiotapes plus a study guide were presented. The slide sets included: Overview, Introduction, The Disc, The Vessels, General Background, Macula, and Summary. In addition, a mannequin and slides were included to enable the student to practice using the ophthalmoscope. The estimated time set aside to accomplish the objectives varied from 3 1/2 to 5+ hours of study and review.

For a student evaluation of the program see Appendix IX.

As a result of the students' enthusiastic reception of the material - they considered it to be one of the best teaching strategies used during the entire Introduction to Clinical Medicine course - and the fact that the NMAC program is available at a very reasonable price, the Learning Resources Center ordered four additional self-instructional units on ophthalmoscopy. The sets, for use by second-year medical students, were to be placed, one each, in the Health Sciences Library, the University of Washington Hospital, and three satellite learning resources centers at University-affiliated hospitals.

"Red Eye, The," University of Minnesota Computer Program -Demopt- in Clinical Ophthalmology, approximately 25 slides, 19 categories from which to request information with one of these categories containing an additional 18 possible sources of information. Approximately 20 minutes, no date, UWLRC.

A patient with a common ocular problem is presented for the students' diagnosis. A brief description of the patient's presentation to the doctor appears on the computer and the student is instructed to look at a specific slide which will illustrate the problem -- red eye. Various diagnostic measures are then possible. The student is asked to indicate which areas he would like to have more information about and he is told that he will be criticized for requesting unnecessary information or inappropriate tests. The category of "Further History" contains 18 possible choices, such as sex, age, occupation, allergies, etc., and as each further piece of information is requested under family history, the computer prints out the answer. After each category of information is supplied by the computer, the student is asked whether he is ready to make a diagnosis or not. He can choose at that point to ask for further tests or information or he can type out a diagnosis (which must be spelled correctly) and the computer will tell him whether or not he is wrong or right and why. For several categories, additional slides are available which could further assist the student in making the correct diagnosis. Interestingly, the cost is given for various tests ordered by the students. The final, correct diagnosis is acute glaucoma.

This was a computer education test case prepared by the University of Minnesota. Four or five additional ophthalmology computer programs based on common ocular problems have been developed for distribution. The University of Washington School of Medicine does not, at the moment, utilize this computer program. It is geared for the family physician rather than for the ophthalmologist and is an interesting exercise in computer use.

As far as recommending it for the medical curricula at the University of Washington, it might be used for the second year physical diagnosis course as an optional teaching aid, depending on whether or not Dr. Kalina judged the quality of slides adequate. Three terminals in the Learning Resources Center are available to students wishing to practice clinical ophthalmology vicariously to supplement actual patient contact. It is a possibility which the Department of Ophthalmology might wish to develop further. The Learning Resources Center would be willing and able to assist in this type of project. In the future it is hoped that terminal centers will be established in the library for easy student and faculty access.

"Screening for Glaucoma in Your Office - Tonometry," Dr. Paul Lichter, University of Michigan, 66 slides, audiocassette, study manual, 1974, UMSM.

In this slide audiocassette series the viewer is instructed in the use of the Schiotz Tonometer. Colored slides illustrate measurement of intraocular pressure and simple criteria are outlined for determining when referrals should be made to ophthalmologists. The program is oriented toward established family practitioners.

Dr. Kalina previewed this slide program, considered it well organized, approved of the specific information, and recommended purchase for use in the medical school curriculum. When this program arrived, Dr. Kalina edited the material to a concise 15 minute self instructional unit.

Videotapes

C. VIDEOTAPES

"Cataract Surgery," as Related to Microsurgery, David Paton, M.D., Baylor College of Medicine, 3/4" videocassette, color, 30 minutes, 1972, PRI-VD.

The program presented innovations in cataract surgery brought about by the cryo-extractor with improved cryoprobe, the operative microscope, and the use of monofilament nylon sutures. Paton expressed his belief that the technique made possible a small wound size, less cornea trauma, less chance of infection, capsule rupture or vitreous loss, and easier post surgery patient management. Further he discussed ways to reduce patient discomfort post surgically. A film was included showing multiple cataract surgeries to illustrate cryosurgery.

Some charts and slides were poorly reproduced - either from too far away or lack of proper lighting. The narration was clear, spontaneous, yet well organized and the best oral presentation The Learning Resources Center previewed from Video Digest. The highlight of the videotape came in last ten minutes when a film showing surgical techniques was shown. It was very well done and the accompanying commentary was excellent. It could be played through without narration, discussed and then replayed with Dr. Paton's observations.

Not recommended for medical school training, but appropriate for residencies in ophthalmology and continuing education for ophthalmologists.

"Ear and Eye, The," Donald J. Soltero, DDS, University of Washington Dental School, 3/4" videocassette, color, 13 1/2 minutes, 1973, UWLRC.

Made for first year dental students enrolled in Oral Diagnosis 400 at the University of Washington. Eye examination, totaling approximately seven minutes, includes such items as:

1) growth examination - extraocular test, conversion test, lid failure test,
2) lid eversion,
3) examination of the cornea, iris, lens,
4) examination for intraocular tension,
5) use of the ophthalmoscope.

May be adequate for dental students, first year medical students or nurses. One ophthalmologist who viewed this tape felt that eversion did not actually occur as demonstrated and some poor techniques were utilized.

"Management of Diabetic Retinopathy," Drs. Straatsma, Kopelow, and Peterson, Jules Stein Eye Institute of U.C.L.A. School of Medicine, 3/4" videocassette, color, 40 minutes, no date, PRI-VD.

The three physicians dealt with ophthalmic principles of diabetic retinopathy in general, specific management of diabetic retinopathy including medical

therapy, retinovitreal surgery, islet cell replacement and photocoagulation, non-proliferative and proliferative diabetic retinopathy diagnosis and treatment techniques and precautions. Photocoagulation treatment techniques included Xenorn arc, ruby laser, and an evaluation of the effective Argon laser. Two different methods of treatment with the Argon laser were discussed.

All presenting physicians were self concious in the presence of the camera, read their material in a stilted manner and spoke too quickly. The charts were adequate but at times the lecture did not relate to the chart shown. Slides were displayed, but some were of poor quality or did not produce well for television. No actual patients were shown. The material presented was comprehensive and well organized; it would have been just as effective as a printed handout however.

As far as educational design is concerned, it is not recommended for medical students. The information would be of interest to medical students and residents. It might be used on a self-instructional basis if no other format is available on the same subject.

Additional videotapes by PRI-VD include:

Neuro-Ophthalmology, to be produced.

Clinical Ocular Pharmacology, Kenneth Richardson, M.D., 30 minutes

Fractures of the Orbit, Byron Smith, M.D., 30 minutes.

Corneal Edema, Claes H. Dohlman, M.D., 30 minutes.

The Use of Genetic Principles in Clinical Ophthalmology, Morton F. Goldberg, M.D., 30 minutes.

Herpes of the Cornea, Herbert E. Kaufman, M.D., 30 minutes.

Management of Diabetic Retinopathy, Bradley R. Straatsma, M.D., 40 minutes.

Angle Closure Glaucoma, Robert N. Shaffer, M.D., 29 minutes.

Chronic Open Angle Glaucoma, H. Dunbar Hoskins, M.D., 45 minutes.

Monocular Amaurosis Fugax: Diagnosis and Treatment, to be produced.

Controversial Aspects of Retinal Surgery, Robert Brockhurst, M.D.

"Neuroanatomy Demonstrations," Part 18, Visual System, 1" IVC, color, 16 minutes, Howard A. Matzke, Ph.D., University of Kansas, 1972, NMAC.

Using a brain specimen and diagrams, Dr. Matzke showed the visual system from the optic nerve to the cortex.

The tape quality was good, the sound track clear, the information accurate, and the pace deliberate. The demonstration technique might have been visually improved. Since the policy of the National Medical Audiovisual Center no longer includes renting videotapes, one must send raw, 1" IVC videotape to Atlanta in order to obtain copies of the available programs. It is also not possible to preview materials ahead of time; therefore, decisions about which tapes one wishes to have dubbed must be made on the basis of descriptive material published by NMAC. The Learning Resources Center decided to have Part 18, Visual Systems, dubbed in order to inspect the type of program presented, as well as for possible use in the physical diagnosis course and anatomy classes.

The material may be useful in the anatomy course of the first year medical school curriculum or for the training of certain medical technicians. It was determined that for purposes of ophthalmology in the physical diagnosis course, the material was elementary, not directly applicable to clinical medicine, and lacked a unique or interesting approach.

"Strabismus," Arthur J. Jamplosky, M.D., University of the Pacific, 3/4" videocassette, color, 20 minutes, no date, PRI-VD.

This lecture dealt with surgical techniques used to correct exotropia and reoperations on the media rectus muscle were shown. The forceps traction test before, during and after surgery to insure globe mobility (independent rotation) was emphasized. Surgeons were cautioned to inject steroids into wounds for all strabismus muscle operations and to avoid anesthesia which might restrict rotation.

Lecture and slide format was stilted and slides were often dark and seen poorly from a distance. Movies of actual operations and the use of live patients to demonstrate strabismus before and after operation would have made the videotape more interesting and less pedantic.

Not recommended for medical students; might be helpful for post graduate electives in ophthalmology if the techniques advocated by Jamplosky are either used by the University or are under consideration by the staff.

"Diagnosis of Vertical Strabismus", Eugene M. Helveston, M.D., Indiana University, 3/4" videocassette, color, 59 minutes, 1974, VIS.

The tape began with a basic anatomy of the eye model and progressed to seven classifications of strabismus:

1) Concommitant strabismus
2) Non-concommitant vertical strabismus
3) Alternating sursumduction
4) Double hypertropia
5) Bilateral vertical deviation
6) Restrictive reversing hypertropia
7) Pseudo-hyperdeviation

Patients were shown for each category. How to evaluate patients and treatment techniques were all comprehensively presented and discussed.

Following the program, the tape can be replayed in a second channel to hear Dr. Robert D. Reinecke and Dr. Eugene M. Helveston discuss controversial aspects of strabismus.

This was a very well organized, comprehensive presentation. The charts were clear, the pace was slow enough to absorb the important points, and the schematics are particularly well done - i.e., a moving dot denotes information being discussed on charts and diagrams, and larger areas are circled for easy identification on diagrams. The use of patients to clearly illustrate problems greatly enhanced the value of the tape for students. The narrator enunciated clearly and in the second channel the spontaneity of responses was refreshing.

Highly recommended for residents and practicing ophthalmologists. Since the videotape is so long and so full of information on less frequently encountered problems of strabismus, it would need to be edited for medical student use.

An additional seven videotapes distributed by VIS and made under the auspices of the AAOO will eventually include:

"Narrow-Angle Glaucoma"
"Low-Vision Patients"
"Vitreous Examination"
"Optic Disk Evaluation"
"Fluorescein Angiography"
"Glaucoma"
"Common Strabismus Problems"

The first two on this list are available now.

The Puget Sound Chapter of the AAOO has decided to purchase the entire set of videotapes and place them on reserve in the Health Science Library for use by academy members as well as health science students.

APPENDIX VII

MEDIA OF POTENTIAL VALUE TO OPHTHALMIC EDUCATION

MEDIA OF POTENTIAL VALUE TO OPHTHALMIC EDUCATION

It was impossible both from the standpoint of personnel and time to bring into the Health Sciences Learning Resources Center all the possible teaching materials in Ophthalmology. Choices had to be made. In the course of researching media, however, several titles did appear which the Department of Ophthalmology might wish to follow up. Since one of the trends in medicine seems to be an attempt to educate the public about its medical problems, and thereby introduce the patient to a working relationship with the physician, included in the list are some films which might have general public educational value. The media has been divided into four categories: those appropriate for teaching in medical schools, nursing schools, post-graduate residencies and fellowships, and for the general public.

1. For Medical Schools

   a. Anterior Adnexa, Louis Girard, M.D., 16mm, color, 15 min., 1970's, CBIEFL.

      Surface and interior anatomy of the eye shown.

   b. "Childhood Strabismus: An Approach for Non-ophthalmologists," Virginia Lubkin, M.D., University of New Mexico, 3/4" video-cassette, color, 23 min., 1973. UNM

      Demonstrates tests used to screen for eye muscle imbalance. (Catalogue states videotape also includes drug interaction in a case of the pushy antibiotic in emergency closed tube thoracostomy.)

   c. "Crossed Eyes in Children," Eugene Helveston, M.D., Indiana University, videotape, color, 31 min., 1974. IUSM.

      Demonstrates diagnostic procedures and treatment techniques for pediatricians and family practitioners when dealing with crossed eyes. Patients illustrated are a nine month old infant and a pre-schooler.

   d. "Demonstration of the Examination of the Eye, A," Richard F. Baske, M.D., University of Wisconsin, 3/4" video-cassette, color, 30 min., 1974. UWMS

      Illustrates branching examination of the eye. Areas covered: the purpose of the exam; examination of visual function; external exam of the lids, lacrimal system, conjunctiva, cornea, sclera, interior chamber, iris, lens, pupils, extraocular muscles; and tests for tropia and phoria. In addition, ophthalmic examination includes techniques for using the ophthalmoscope, measurement of intraocular pressure with the Schiotz tonometer, specialty testing of optokinetic nystagmus in neurological patients, eversion of eye lids for foreign bodies, extraocular movements for tropia or paresis, and a summary demonstration.

   e. Diagnosis and Management of Primary Glaucoma in the Adult, Drs. Carbajal and Shearer, University of Loma Linda, 16mm, color, 22 min., AMFL

      Demonstrates diagnosis of glaucoma through use of tonometer, slit lamp, and gonioscope. Several surgical procedures for treatment included.

f. "Diagnosing Common Eye Inflammation," Virginia Lubkin, M.D., University of New Mexico, 3/4" video-cassette, color, 15 min., 1973. UNM

Reviews examination of the eye to show the difference between conjunctivitis, herpes simplex, iridocyclitis, and acute glaucoma. (Videotape also contains material on lymphangiograph and photosynthesis.)

g. Essentials of the Examination of the Eye, The, Ephraim Friedmen, M.D., Boston University Medical Center, 16mm, color, 15 min., no date, SMP

Made for medical students and includes only the parts of the eye examination which are considered basic in a routine physical examination.

h. Nerves, The, Louis Girard, M.D., 16 mm, color, 15 min., 1970,s. CBIEFL

Shown are extraocular motor, sensory, and intraocular nerves. Light reflex and parasympathetic and sympathetic pathways are also illustrated.

i. "Papilledema," William H. Havener, M.D., Ohio State University, videotape, color, 18 min., 1973. OSU

Demonstrates characteristics of papilledemia as seen through the ophthalmoscope. Necessity of being able to diagnose condition as it may be a sign of serious intracranial disorder is stressed.

j. Red Eye, The, Ira A. Abrahamson, M.D., University of Cincinnati School of Medicine, 16 mm, color, 20 min., no date, SMP

Demonstrates how to diagnose many rare and common anterior segment eye conditions which produce the red eye.

k. Screening for Strabismus, Oklahoma State Department of Health, 16mm, color, 8½ min., 1967. OSDH

Demonstrates the Hirschberg corneal light reflex test.

2. For Nursing Schools

a. Anterior Adnexia, The, (See Medical Schools)

b. "Childhood Strabismus: An Approach for Non-ophthalmologists," (See Medical Schools).

c. "Demonstration of the Examination of the Eye, A," (See Medical Schools).

d. "Eyes (A two part series)" Herbert H. Lehman, College of the City University of New York, ½", 1", or 3/4" video-cassette, color or black and white, 60 min. each, 1974. BHES

Focuses in a lecture series on preparing the nurse in physical assessment skills. Accompanied by individual study guides and instructor's manual, as well as bibliography of suggested readings, physical exam forms and history taking guides. The Learning Resources Center asked to preview one of the 60 minute lectures on the eye, but inadvertently a program on cardiology arrived instead. Due to time limits, the preview could not be completed before the report.

e. Eyes and Seeing, Encyclopedia Brittanica and Educational Corporation, 16mm, color, 20 min., 1968. UCEMC

Introduces students to eye structure and how the brain receives eye impulses. Listed as college level but might be useful for general public education as well as possible review of anatomy for nurses.

f. Nerves, The, (See Medical Schools)

g. "Screening for Strabismus," (See Medical Schools)

h. "Special Eye Care for Burns," Armed Forces Institute for Pathology, 16 mm, color, 11 min., 1968. AFIP

Concentrates on nursing care of second and third degree facial burns. Prevention of eye infection and corneal ulceration included.

3. For Post-Graduate Programs

a. "Anterior Segment Eye Disorders," Set I, II, and III, each consisting of 20 slides. SPFL

b. Anterior Vitrectomy, George M. Gombos, M.D., Downstate Medical Center, 16mm, color, 12½ min., no date. SMP

Shows two operations: 1) a partial vitrectomy and 2) an almost complete removal of the vitreous body.

c. Corneal Cryo-preservation, Kaufman and Capella, color, 20 min., 1970. ACSMPL

Demonstrates low temperature corneal cryo-preservation beginning with removal of the cornea from the globe. Described, also, are the use of tissue, freezing and thawing rates and solution concentrations.

d. Correction of Senile Entropion, James Hargiss, M.D., Eye Clinic of Seattle, Wash., 16mm, color, 12 min., 1970's. SMP

Discusses the physiology of senile entropion and shows the technique of shortening the inferior aponeurosis for its cure.

e. "Cross Eyes in Children," (See Medical Schools)

f. Demonstration of the Examination of the Eye, A. (See Medical Schools)

g. Development of the Lens, The, H. Saul Sugar, M.D., Wayne State University Medical School, 16mm, color, 15 min., no date. SMP

Describes and classifies the common congenital anomolies of the lens. Adolescent and senile cararacts shown. Complications of hypermature cataracts and phako-anaphylasis included.

h. Diagnosis and Management of Primary Glaucoma in the Adult, The, (See Medical Schools)

i. Differential Section of the Facial Nerve for Blepharospasm, David H. Reynolds and J. Lawton Smith, M.D.'s, University of Miami School of Medicine, 16mm, color, 17 min., no date. SMP

Illustrates clinical findings in patients with blepharospasm before and after facial nerve surgery. Effectiveness of this kind of surgery is commented on as well as demonstration of techniques.

j. "Differential Section of the Facial Nerve for Intractable Blepharospasm, Alston Callahan, M.D., Birmingham, Alabama, 16mm, color, 13 min., no date. SMP

Shows six typical patients and the surgical technique of finding the facial nerve plexis. Nerve stimulator is used to find which muscles are activated by the nerve branches. Nerve branches then avulsed and patients shown before and after operation.

k. Orbital Foreign Body - Localization and Extraction, Armed Forces Institute of Pathology, color, 9 min., no date. AFIP

l. Orbital Repair with Methylethacrylate, Peter H. Ballen, M.D., 16mm, color, 11 min., 1971. DG

Demonstrates operating room techniques as well as post-operative care.

m. "Papilledema," (See Medical Schools)

n. Pediatric Ophthalmic Anesthesia, Samuel Blank, M.D., Wills Eye Hospital, Philadelphia, Pennsylvania, 16mm, color, 12 min., no date. SMP

Illustrates general anesthetic technique for younger patients. Actual induction of anesthesia shown: Rectal basal anesthesia supplemented with halothane given "through a unique oral airway."

o. Red Eye, The, (See Medical Schools)

p. Removal of Magnetic Foreign Bodies from the Eye, Armed Forces Institute of Pathology, 16mm, color, 14 min., no date. AFIP

q. Reverse Prism in the Treatment of Strabismus and Amblyopia, William Rubin, M.D., New Brunswick, New Jersey, 16mm, color, 14 min., no date. SMP

Shows small angle strabismus treated by the use of a reverse prism and calibrated occlusion. Methods of detecting suppressed amblyopia and explanations of the usefulness of reverse prism and calibrated occlusion included.

r. Slit Lamp Gonioscopy and Goniophotography, Adolph Posner, M.D., Manhatten Eye, Ear and Throat Hospital, 16mm, color, 17 min., no date. SMP

Introduces history of slit lamp gonioscopy technique followed by a detailed demonstration. Slow motion pictures of both normal and abnormal angles. Use of the gonioscope in the diagnosis of closed angle glaucoma emphasized.

s. Sub-Corneal Pustular Dermatosis, Drs. Sneddon and Wilkinson, England, 16mm, no date. IDCE

Demonstrates the disease in two patients and discusses the histopathologic findings as well as responses to therapy.

t. Surgery of the Lens in Children, Joaquin Barraquer, M.D., Barcelona, Spain, 16mm, color, 22 min., no date. SMP

Demonstrates slit lamp surgical microscope and stresses the necessity of careful and prolonged post-operative control of the patient. Surgical procedures include: Removal of a soft mature cataract, Marfan's Syndrome, and a dislocated lens.

u. Surgical Management of Eye Lid Burns, John A. Boswick, M.D., 16mm, 6 min., 1966. ACSMPL

Shows correction of bilateral lower eye lid contractures on a nine year old boy who was injured while playing with gun powder.

v. "Tumors of the Eye - Current Outlook," American Radium Society, 3/4" videocassette, 28 min., 1969. ACSMPL, ACR, OSU, UNM

Discusses several ways to approach management of tumors of the eye. Originally a presentation at the 1969 American Radium Society meeting in Philadelphia, Pennsylvania.

w. Vitrectomy After Perforating Injury With Intraocular Foreign Body, Robert Machemer, M.D., 16mm, 10 min., 1970's. CBIEFL

Demonstrates vitrectomy through the pars plana on an eye with non-magnetic foreign body and vitreous hemorrhage. A detached retina is repaired. The source of illumination is intraocular fiberoptics.

4. General Public Education

a. Crossroads at Four, Washington State Society for the Prevention of Blindness, 16mm, color, 13 min., 1960. WSSPB

Presents unrecognized amblyopia and stresses need to check vision of young children.

b. Don't Push Your Luck!, National Society for the Prevention of Blindness, 16mm, color, 13 min., 1968. NSPB, BTL

Stresses the need for eye safety on the job. Reenactment of an actual on the job accident which needlessly deprived an employee of his sight.

c. Eyes and Seeing, (See Nursing Education)

d. Johnny's New World, Washington State Society for the Prevention of Blindness, 16mm, color, 16 min., no date. WSSPB

Stresses need for early detection and treatment of visual problems in children.

e. Open Your Eyes, UNICEF, Michigan State University, 16mm, color, 16 min., no date. MSU

Dramatizes the fight to control trachoma. One suspects it is a commercial for UNICEF's work but might also be useful for general public education on the subject of trachoma.

f. Penetrating Eye, The, Thomas L. Hayes, Ph.D., Donner Laboratory, University of California, 16mm, color, 21 min., no date. EL

Discusses basic principles of the scanning electron microscope including its use with the retina, bacteria and blood cells.

g. Sensory World, The, Jerome Lettzin and Wilder Penfield, M.D.'s, color 33 min., 1971. CRM

Discusses how the eyes work as well as the ears and tactile sensations. Includes a demonstration of the world as color blind people see it.

APPENDIX VIII

AN EXAMPLE OF INSTRUMENTS USED FOR EXPERT FACULTY REVIEW OF MEDIA

EXAMPLE II - MEDIA EVALUATION

(Objectives - Content)

Program Title BLOOD COMPONENTS AND THEIR USES

Type of Media 16mm color film

Your name and position J. R. McArthur, M.D.

Reason for reviewing Program Blood Resources Contract

Did you complete the entire program? (X)yes ( )no

1. What were the primary objectives of the program in your opinion?
   ( ) To teach a skill
   (X) To teach factual information
   (X) To increase awareness and/or to motivate the audience
   ( ) Other_____
   ( ) Not made clear

2. Were the length and format of the program appropriate for these objectives?
   ( )yes (X)no: Too long X Too short____
   A better format would be_____

3. What audiences would you recommend for this program?
   ( ) Laymen
   (X) Health science students
      (X) Medical, Level_____
      (X) Nursing, Level_____
      ( ) Dental, Level_____
      (X) Other_____
   (X) Health professionals (e.g., continuing education)
   ( ) Other_____

	Yes	No
4. Did the material remain consistently appropriate to this level:	(X)	( )
comments:		
5. Was the information presented current and accurate?	( )	(X)
comments: *Probably only partially.*		
6. Were the techniques presented current and accurate?	( )	(X)
comments: *Several different components and methods.*		
7. Were appropriate concepts emphasized?	(X)	( )
comments: *In terms of whole blood vs. packed cells. Some others (re. components questionnable)*		

	Yes	No
8. Do the concepts and techniques presented have universal application?	( )	(X)

comments:
Some specific for Australian Commonwealth

9. What content areas were included that should have been omitted?

Areas dealing with non-available preparations.

10. What content areas were omitted that should have been included?

11. Would the program require negative teaching on your part (i.e., would you have to reteach differently any content or philosophy presented in the program)?

Yes.

12. Were the accompanying materials (if any):

( ) Necessary for understanding the program
( ) Not necessary for understanding, but add to value
N/A

( ) Too simple
( ) Too complex
( ) Just right

13. How would you recommend using this program?

( ) As main introduction to topic, supplemented by_____
( ) As supplementary material for lecture or discussion
(X) As resource material for review or reference
( ) Not at all
( ) Other_____

14. In what kinds of learning situations could this program be used most succesfully?

(X) Self-study
(X) Group (under ten persons)
( ) Group (over ten persons)
( ) Lecture
( ) Other_____

15. How many exposures to this material would be required for clear understanding to meet the objectives?

( ) Once only
( ) Once or twice
(X) Two to five
( ) More than five

Overall assessment of the program (Please mention ideas you have which would influence your selection of this program.

Really a fairly good effort, appropriate for Australia, however, differences in products could tender it less than useful here, unless appropriate revisions were made.

Date *October 3, 1974*

BLOOD COMPONENTS AND THEIR USES

Minute	Content	Comments
1	Credits. Introduces blood component therapy.	
2-3	Lists components prepared in Australian blood banks: whole blood, packed red blood cells, concentrated platelets, cryoprecipitate, and plasma. Plasma fractions prepared by Commonwealth Serum Laboratories include stable plasma protein solution (S.P.P.S.) albumin, fibrinogen, immunoglobulins, including four specific immunoglobulins, antihemophilic factor (A.H.F.) and P.P.S.B. (Factors II, VII, IX and X).	*References to Australia* *Valid component?* *Valid concentrate?*
4	Discusses history of blood component therapy and development of laboratory and storage techniques to achieve efficient use of a single unit of blood.	
5	Describes how blood costs are borne in Australia. Stresses economy of specific blood component therapy as better and more efficient medicine.	
6	Describes screening process of donor blood, including ABO and Rh grouping, syphilis and hepatitis testing.	
7-8	Presents separation and storage techniques of blood components in a 4-pack system: whole blood is centrifuged and plasma is siphoned into pack #2; the remaining concentrated blood cells if stored in the plastic pack have a 21 day shelf-life, if bottled they must be used within 24 hours after removal of the plasma.	*Different techniques?* *?*
9	Pack #2 is centrifuged and plasma is siphoned into pack #3, leaving the platelets in pack #2. The plasma in pack #3 is frozen, thawed and centrifuged. The plasma is siphoned into pack #4, leaving cryoprecipitate, the final component produced by centrifugation in pack #3.	

Minute	Content	Comments
10	Nine additional components are separated from the plasma expressed from the cryoprecipitate (pack #4) by more complex techniques at the Commonwealth Serum Laboratory.	
	Presents indications for whole blood transfusion to maintain blood volume in acute severe hemorrhage, including massive blood loss due to multiple injuries, G.I. hemorrhage and major surgery.	*Fresh whole blood seldom if ever required.*
11	Transfusion of packed red blood cells reduces the risk of circulatory overload.	
	Case presentation of a patient with anemia complicated with cardiac failure.	*Importance of VP monitoring.*
12	Presents indications for packed red blood cell transfusion: chronic anemia, particularly in anemic patients with cardiac failure, liver and renal diseases.	
13	Lists elements in red blood cells: white cells, some platelets, and a small amount of plasma, which may need to be removed for patients with transfusion reactions. The resulting Dextran sedimented or washed red blood cells must be used within 12 hours.	*Available here?*
	Describes indications for platelets: thrombocytopenia, as with aplastic anemia and leukemia; platelets are less effective for I.T.P.	*?*
14	Case presentation of patient with thrombocytopenia secondary to leukemia to illustrate concentrate platelet use and storage.	*Different techniques?*
15	Life span of platelets in circulation is 10 days. Describes damage and storage. Presents protein fractions: plasma volume expanders - S.P.P.S. and albumin; coagulants - fibrinogen, cyroprecipitate, A.H.F. and P.P.S.B; and immunoglobulins - both normal and specific.	*Not totally clear* *Valid component*

Minute	Content	Comments
16-20	Describes in detail the differential precipitation process used by the Commonwealth Serum Laboratory for separation of plasma protein fractions.	
21	Details use of volume expanders: Stable plasma protein solution (S.P.P.S.) - replaces 5% albumin solution. Indications - hypovolemic shock.	*Valid component*
22	Illustrates by microphotography the capillary action in hypovolemic shock and the consequent effect of S.P.P.S.	*Too much emphasis on this as sole method of volume expansion*
23	Other indications for S.P.P.S. include: traumatic and surgical shock with moderate blood loss, cardiac by-pass surgery, as an interim emergency procedure while awaiting crossmatch blood, and use with whole blood transfusion.	
24	Describes Australian Flying Doctor Service. Presents storage life for S.P.P.S. - four years at refrigerated temperatures, and is hepatitis free. Presents albumin - available in S.P.P.S. and in 25% solution (salt poor concentrated albumin).	?
25	Discusses indications for concentrated albumin: hypoproteinemia and increased intracranial pressure. Contraindications include circulatory overload.	*Indications too strongly stated.*
26	25% albumin is stable and can be stored for long periods under refrigeration and is hepatitis free. Introduces the coagulants.	
27	Factor I - fibrinogen. Indications - bleeding management with low fibrinogen levels, specifically, congenital afibrinogenanemia and acquired hypofibrinogenemia.	*Really this positive? No.*

Minute	Content	Comments
28	Case presentation of obstetrical accident with hemorrhage. Fibrinogen may contain serum hepatitis virus and is stable only in the dried state; must be injected intravenously as soon as it is dissolved.	
29	Factor VIII - cryoprecipitate. Indications 0 classic hemophilia patients (hemophilia A) and von Willebrand's Disease. Cryoprecipitate should be given at the first sign of bleeding to prevent hematoma and hemarthrosis.	*Plasma as well*
	Case presentation of a patient with hemarthrosis, presents dosage.	*No dosage guideline.*
30	Cryoprecipitate may contain hepatitis virus and is stable up to six months in deep freeze at -20°C.	
31	Presents indications for A.H.F. when cryoprecipitate is contraindicated due to allergic serum reaction and for surgical cases for hemophilia patients.	*Difference not clear. More details on this.*
	Discusses dosage: freeze-dried is stable for two years.	*No dosage guideline.*
32	Summarizes cryoprecipitate and A.H.F., P.P.S.B. - Prothrombin (Factor II), Preconvertin (Factor VII), Stuart Factor (Factor X), and hemophilia B (Factor IX).	*Invalid component*
	Indications: Christmas Disease (hemophilia B), overdose of oral anticoagulants, hemorrhagic disease of the newborn not responding to vitamin K therapy, and hypoprothrombinemia.	" "
33	Describes P.P.S.B.'s composition and storage (freeze-dried product stable for 12 months at -20°C.	" "
34	Contraindications - risk of transmitting serum hepatitis virus.	
	Summarizes coagulants.	

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Minute	Content	Comments
35	Presents protein fractions: immunoglobulin - describes composition. Indications: hypogammaglobulinemia, infectious hepatitis contacts, measles contacts. Presents indications for administration of specific immunoglobulins.	
36	Presents plasmapheresis as a technique for obtaining a high yield of plasma products. Hyperimmune globulins are obtained from plasma known to contain a high level of these antibodies; anti-Rh (D), tetanus, vaccinial, and varricella.	
37	All immunoglobulins must be administered intramuscularly except for agammaglobulinemia, which may be administered intravenously.	*Confusing - conflicting*
38	Schematically presents the use of anti-Rh (D) globulin in the treatment of an Rh factor patient.	*Good.*
39	Lists fractions free from risk of serum hepatitis albumin S.P.P.S. immunoglobulins	*? True*
40	Presents the laboratory procedure for immunoelectropoiesis for the detection of hepatitis carriers.	
41	Discusses probable future advancements in blood component therapy.	
42	Reemphasizes value of blood component therapy. Credits.	

APPENDIX IX

SUMMARY OF STUDENT EVALUATION OF

NMAC OPHTHALMOSCOPY SELF-INSTRUCTIONAL UNIT

SUMMARY OF STUDENT EVALUATION OF NMAC OPHTHALMOSCOPY SELF-INSTRUCTIONAL UNIT

This is the evaluation form for the National Medical Audio-Visual Center's Multi-Media Unit on learning Ophthalmoscopy. Your observations are important to determine whether this instructional material should be included in the Human Biology 451-460 course in coming years.

1. **Please provide an estimate of time spent on each part of the set, check its worth, and make any additional pertinent comments.**

PERCENTS:	Time Estimate	Very Valuable	Valuable	Unnecessary	Comments
I. Overview	8 min.	20	53	27	OK for beginners, unnecessary for review; Dull, worthless, kindergarten.
II. Introduction	11 min	33	53	14	
III. The Disc	34 min	88	12	-	
IV. The Vessels	46 min	94	6	-	Excellent, but vessels too long. Clinical correlation well done.
V. General Background	34 min	88	12	-	
VI. Macula	60 min	60	33	7	
VII. Summary	72 min	72	14	14	Want more unknowns of fundus. Total time too much. Didn't use study guide.

2. Do you think you could have learned this material just as well using another method instruction? Yes 6% No 94% If yes, explain. Through reading but this wouldn't be as quick, or as well organized.

3. Do you think you could have learned this material more quickly using another method of instruction? Yes 12% No 88% If yes, explain. Faster with syllabus than tapes. Pauses on tape too long, easier to stop the recorder while you think.

4. If the slides had been numbered and announced by number on the tape, it would have:

   12% made following the study guide easier (Got lost, didn't know where was)

   24% made no difference

   46% distracted the viewer (Tones are enough, perhaps every 5th slide)

   18% made review of slides easier

5. The narrator tells you not to take notes because the Study Guide is sufficient.

   Did you take additional notes anyway?____ NO: 53%; YES: 47%

   If not, did you wish you had?____ 18% want copies of charts

   NO: 47% YES: 6% No Answer: 47%

6. After working with the material, do you feel you have reached the study objectives of being able to:

carry out a systematic examination of the ocular fundus? Yes 100% No ____

accurately describe the findings? Yes 94% No ____ ? - 6%

determine whether or not the fundus is within normal limits? Yes 88% No 12%

use an ophthalmoscope?? Yes 76% No 12% ? - 12%

7. If you did not reach these study objectives, why not? No answer: 53%
Need practical experience; need practice on patients; some of abnormals looked like previous normal, ie disc slides; you would have to be stupid or blind; corresponding slides not avail

8. What addidtional help would you require to assimilate the information? Check as many as you like.

Number answering:

1 none

1 further explanation by the instructor

7 review of slides and tapes

3 additional textbook reading

10 study of a new set of slides

____ Explain: Need additional books to get clinical correlation of findings; have more unknowns with answers at end of tape to help in assessment; make slide set of abnormal fundus; explanation need of specific lesions; saw retinal pathology in patient, but couldn't find picture in text.

9. Was the mannequin exercise of value in your efforts to master the use of the ophthalmoscope? Yes 17% No 35% If not, why not? Slides not right ones, were mixed up. Not well coordinated; couldn't find appropriate equipment.

No answer: 6%; Not used: 42%

10. How would you improve the presentation of material? Check as many as you like.

____ make it less disease-related?

48% make it more disease related?

6% make it shorter

48% leave it alone

18% Other. Explain. Add more disease slides

11. For whom would you purchase this self-instructional unit:

16 medical students

2 paramedics

3 nursing students

8 library; to be used on an optional basis by anyone

1 no one

OVERALL COMMENTS:

Best instructional material ever worked with.
Don't incorporate into core, announce availability - so it can be used when students are on the wards.
It would be very helpful to suggest major cause of abnormalities, also to discuss findings in major diseases, i.e., diabetic, retinopathy, hypertension, ASVD.
Would be helpful to have characteristics of fundus changes seen with various diseases listed so that the list could be referred to for future use.
It is an excellent teaching material, leave it alone.

APPENDIX X

INTRODUCTION TO CLINICAL MEDICINE II
OPHTHALMOLOGY SEMINAR - 1975

INTRODUCTION TO CLINICAL MEDICINE II

OPHTHALMOLOGY SEMINAR - 1975

A. Curriculum Format

Over a two-day period, each student will attend eight seminars. The class has been divided into four groups. At the beginning of each afternoon, students should go directly to the room scheduled for 1:30 - 2:30 on the attached rotation schedule.

Thursday, Feburary 20, 1975, 1:30 - 5:30 p.m.

Section 0* - How the Eye Sees	Dr. Anita Hendrickson
Section 1 - Visual Acuity+	Dr. Robert Kalina
Section 2 - Ophthalmoscopy+	Dr. Edward McLean
Section 3 - Glaucoma+	Dr. Jonathan Herschler

Friday, February 21, 1975, 1:30 - 5:30 p.m.

Section 4 - The Red Eye+	Dr. John Chandler
Section 5 - Injuries+	Dr. Edward McLean
Section 6 - Amblyopia and Strabismus+	Dr. Jonathan Herschler
Section 7 - Neuro-Ophthalmology+	Dr. Richard Mills

*Section 0 will review the form and function of the eye and visual system. Section 1-7 correspond to the sections in "Ophthalmology Study Guide for Medical Students".

+Students will be expected to have completed the appropriate section in "Ophthalmology Study Guide for Medical Students", plus additional self-instructional materials.

B. Objectives for Ophthalmology Seminar, 1975

After completing the Ophthalmology section of ICM-II:

1. You should be able to measure and record visual acuity and color vision, then determine whether reduced visual acuity is due to uncorrected refractive error or an opacity in the cornea or lens.

2. You should be able to perform ophthalmoscopy, differentiate a normal from an abnormal fundus, describe the appearance of an abnormality and indicate its relationship to ocular, neurologic or systemic disease.

3. In an adult patient, you should be able to measure the intraocular pressure with a Schiotz tonometer and to evaluate the nerve head, classifying it as normal, glaucomatous, or abnormal-but-nonglaucomatous.

4. Given a patient with a red eye, you should be able to determine whether the disorder is one which requires the prompt attention of an ophthalmologist or if it is one which you, as a primary care physician, might appropriately treat.

5. When your patient exhibits any of the common ocular or orbital injuries, you should be able to evaluate the problem and determine whether it requires the prompt attention of an ophthalmologist or whether you, as a primary care physician, can treat the condition.

6. You should be able to detect amblyopia in a child or adult, determine the presence of strabismus, and if strabismus is present, be able to diagnose the type of strabismus (i.e., esotropia, exotropia, hypertropia).

7. You should be able to evaluate ophthalmological signs of neurologic disorders. This evaluation will include observations of visual function, appearance of retina and optic nerve head, ocular movements, and pupillary reactions.

C. Study Assignments

Prior to February 20, students should complete the following materials:

Text:
Ophthalmology Study Guide for Medical Students, American Academy of Ophthalmology and Otolaryngology, Jan. 1975.

AV Programs:
Ophthalmoscopy: Basic Self-Instrution for Medical Students (SS-AR-M)
Pupils and Visual Fields (VC)
Tonometry: Screening for Glaucoma (SS-AR)
Glaucoma (SS-AR)
Optic Nerve and Fundus Oculi (SS-M)
Examination and Treatment of External Eye (VC)

Handouts:
Historical Data Base: Eye
Recognizing the Normal and Abnormal Fundus (This accompanies the slide program "Ophthalmoscopy" above)